AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

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How to Use the Shallow Food Chamber With the Clear Brood Nest

By E. L. Sechrist,

Tahiti.

This article is part of a later series which the author is preparing on certain special practices in beekeeping such as the operation of the duo-queen hive which he is now trying in Tahiti; on the production of comb honey in sections; on the Rauchfuss method of producing comb honey in shallow frames and liquid honey without the use of a honey extractor; and other subjects which would have made his first series of articles on the clear brood nest extend over a longer period than seemed desirable. As some of our readers have requested an article from him on this subject, we are publishing it at this time.—Editor.

TO use shallow food chambers successfully is one of the most difficult problems in beekeeping, and perhaps the best way has not yet been found; but the use of the one-story clear brood nest system presents a good solution.

Editor Cale can testify to an experience which he and I shared in operating a neglected fifty-colony apiary near Washington, D. C., while both of us were employed in the Federal Bee Culture Laboratory. We found many colonies swarming or preparing to swarm from a small brood nest in a shallow food chamber without even having begun to establish a brood nest in the larger brood chamber below it. We hurriedly placed the shallow food chambers below the brood chambers and the swarming ceased.

Unseasonal spring swarming is one of the difficulties encountered in the use of shallow food chambers, particularly by those beekeepers who consistently have small spring colonies; and it is especially troublesome in localities and under conditions which cause the small wintered-over colony to consume all the stores in the brood chamber and establish its spring brood nest in the shallow food chamber where only a little honey and stored pollen remains. Such a colony also stores incoming nectar in the shallow food chamber and the consequence is that it soon becomes so crowded that the queen has no more room to lay eggs there while the colony is not yet large enough to descend and start a brood nest in the cold brood chamber. Reversing the two stories enables such colonies to expand upward into the larger brood chamber, which is then considerably warmer than it was when below the cluster.

Previously, in California, I had experienced the same kind of trouble with small colonies swarming prematurely, both from shallow food chambers and from standard brood chambers when they had reached the same honey-bound condition before the colonies had become populous and of standard honey-storing strength.

At one time, I moved 100 weak colonies to a flow from vegetables grown for seed, particularly onions, expecting them to build up for a later flow, and supplied them with shallow supers because they were too weak to use a full depth. Unfortunately, I left them alone too long. Only a few of these colonies began work in the supers before they made preparations to swarm. To check this I extracted all the honey and nectar possible so as to give them a clear brood nest. With no more attention from me, a few of the stronger colonies stored nectar in the shallow super combs and filled the brood chamber with brood as I had hoped all of them would. These were of **standard honey-storing strength** at the right time, while the weaker colonies required much more time and attention and did not, even then, make a good crop.

That onion nectar, by the way, was quite odoriferous when first gathered; but well ripened it made a very good honey, and, after a few months lost nearly all its onion flavor!

Summing up what I have seen and experienced, I would say that one who wishes to use shallow food chambers should have a locality and system of management whereby strong colonies both spring and fall are the rule and not the exception. He can have such colonies through use of the one-story clear brood nest system adjusted to suit his conditions. These colonies, in standard spring condition, will more than fill a shallow food chamber and can readily establish a brood nest in the brood chamber, while they fill the food chamber with honey. If there is a good spring supply of pollen, the food chamber will probably contain considerable stored pollen, and when filled with honey will be an admirable food supply for the following winter.

Then the question arises: what is to be done with the food chamber during the rest of the season when supers are on the hives? Several plans are available and the beekeeper should adopt the one which, by judgment and then by trial, he finds best for his locality and his particular system of beekeeping.

In Part III of my first series of articles on the clear brood nest method, on page 249 of the A-B-J for May, 1936, I have referred to the use of a food chamber or other shallow super, but something additional may be said.

Under conditions where top-supering is satisfactory, the shallow food chamber may be allowed to remain all season, where it is, immediately above the brood chamber, particularly

if shallow supers are used to store the crop of honey, and it will then often serve as an excellent queen excluder.

Plenty of super room should, however, be given the colony before the bees have begun to seal honey in the food chamber.

If, however, the supers are given too late, or if for any other reason the colonies do not at once begin storing in the supers, the food chamber must be (1) placed under the brood chamber; or (2) be moved to the top of the pile of supers; or (3) removed entirely and placed on some weaker colony where several food chambers may be stacked on top of each other, out of the way until the honeyflow is over; or (4) it may be used in requeening the parent colony.

Placed below the brood chamber, the shallow food chamber serves well as extra clustering space for the colony during the summer, although care should be taken, sometime during the honeyflow, to see that it is full of honey, and, if not, to put it in some position where it will be filled. If the fall honeyflow is good and reliable, it may be replaced in its proper winter position as the main honeyflow draws to a close, with an empty super above it. It should then become filled with good fall honey while any further surplus is stored in the super above it.

If it is decided to place the shallow food chamber on top of the pile of supers, it need remain there only until the bees have begun to work well in the supers. Then it may be replaced just on top of the brood chamber, or moved, as suggested, to a weak colony for the summer.

If permitting the shallow food chamber to remain somewhere in the stack of supers on its own hive is not satisfactory, it may, as stated above, be placed on some other hive. This plan is good, requiring a minimum of labor and satisfactorily taking care of those colonies which, while they are not of standard honey-storing strength, still may be expected to store some honey if not required to begin their work in supers entirely empty.

There is a fourth way in which a shallow food chamber may be advantageously used during the summer. If it contains considerable brood, with some young larvae and eggs, it may, when removed from the brood chamber, be supplied with a bottom board and cover and placed on a new location, after making sure, of course, that the queen is in the brood chamber on the old location. I have sometimes, in emergency, placed the food chamber directly on the ground, without a bottom board, and this works very well if the earth is not too wet.

This small colony should rear a queen or, preferably, be given a choice ripe queen cell and, not having much room for brood rearing, probably will remain a small colony all the season; or, if it does become strong, another shallow food chamber may be given it as a super, when one or both may become filled with honey. When fall comes, and extracting supers are removed, this small colony with a young queen may be united with the parent colony by the newspaper method or by some other as satisfactory. The young queen usually descends into the brood chamber and the old queen disappears, although it is is possible that both queens may remain in the hive until spring. **This is a good method of handling food chambers, either shallow or full depth, and of requeening with little trouble. If this method of requeening is liked, I believe that no other use of the food chamber during the summer will be found more profitable. Care must be taken, however, to have a sufficient number of food chambers full of stores to supply all the colonies needing them.**

Something should be said, in this connection in reference to the difference in behavior between Caucasian and Italian bees. I have been told, and it is also my observation, that Caucasian bees tend, more than Italians, to contract the brood nest toward the end of the honeyflow and to fill the brood chamber with winter stores. If, in addition to the brood chamber full of stores, a Caucasian colony has a food chamber also full, it is probable that the food chamber will be so full of stores in the spring that the brood nest will be first established in the brood chamber, and that no unseasonable swarming will occur. Also, Caucasian colonies, even though in the spring they appear to be smaller than Italian colonies, increase their population so rapidly that, even though they do start brood rearing in the shallow food chamber, so many young bees will probably emerge before much honey is stored, that the cluster will be large enough to descend into the brood chamber. The food chamber will then be abandoned as a brood nest and will become filled with honey.

Under conditions that cause an Italian colony with a brood nest either in the foor chamber or in the brood chamber, to become honey-bound, a Caucasian colony usually increases in population so rapidly that it uses up the incoming nectar fast enough to prevent such a condition arising. I have seen Caucasian colonies which had considerable sealed honey in the brood chamber, rear brood on the outer side of the outside combs next the hive wall and in any other available cells in the hive, while the egg-laying in a comparable Italian colony would be confined to a compact brood nest in the center of the hive with the adjacent combs packed full of honey and pollen.

Caucasian colonies, perhaps because of their rapid spring increase of population will, more readily than Italian colonies, go up through a food chamber containing honey, even sealed honey, and begin work in empty supers placed on top; but, if care is taken that work is begun in the supers before honey has been sealed in the food chamber, even Italian colonies may often be worked very satisfactorily by top supering and with the shallow food chamber remaining just on top of the brood chamber all the season, and acting, in large measure as a queen excluder would when used in the same position.

ABJ

About Honey Spoilage

By Warren H. Woessner,

Wisconsin.

IN recent years honey spoilage due to fermentation has become not only an important economic problem but also an expensive bothersome one to the thrifty beekeeper. The microbiologist in cooperation with the chemist has been doing much research with the ultimate purpose in mind to find a practical way to help eliminate this constant threat of waste. These scientists have disclosed some very helpful facts pertinent to this problem.

Honey spoilage is caused by yeasts which will grow in the honey if favorable conditions prevail. As they multiply the sugar is converted to carbon dioxide, water and some ethyl alcohol.

It may seem strange that the nectar of the flowers which is so carefully handled by the bee and transformed into honey should be so strongly infected with yeasts. But we are told that yeasts are found virtually everywhere in nature. Yeasts have been observed in the nectar of flowers, on the pollen, and on the pistils. The bee has yeasts in its digestive tracts, on its legs, on its tongue, and in its honey sacs. Even the air which we breathe contains yeasts. Perhaps now it is more obvious that honey, as a rule, contains many yeasts—for the very nectar from which it is made and the bee which makes it are both contaminated with yeasts—the micro-

organism responsible for the spoilage.

It is true that while the comb remains sealed the honey will not spoil as the concentration of the sugar is too great to permit the yeasts to grow.

On the other hand, extracted honey presents quite another and more difficult problem. Before we can discuss the causes of the spoilage of this type of honey, we will have to explain a few characteristics of the ever-present yeasts.

We all know that we can keep a jar of jelly or jam indefinitely as long as we exclude air with paraffin wax or some sort of an air tight cover. We also know that if we remove the paraffin and let the jar stand for a few weeks moldy growth will appear. Here it is seen that by excluding air no molds were able to grow, but as soon as we give them air to breathe, they grow and spoil the jam.

Yeasts, on the other hand, are "different," that is to say, they can grow on high sugar concentrations such as we find with honey and in the presence of hardly any air, a lack of which would "choke" the molds. Thus yeasts are very destructive due to their ability to multiply under very adverse conditions.

The number of yeasts present in the extracted honey is very significant. If honey A has in actual numbers more yeast cells per ounce than honey B, then the tendency of A to spoil is greater than that of B. The number of yeasts present in any honey may be influenced by the geographical location.

The amount of moisture in the honey is important. As a general rule honeys containing 21% of water will ferment, whereas those with less than that amount will not. If honey with less than 21% of water stands in a moist atmosphere for any length of time it will absorb water from the air and consequently raise the moisture content to a figure greater than 21% and the possibilities of fermentation will be enhanced.

Some yeasts are more virulent than others, that is, they can grow in honey that contains much less than 21% of water. So we see that even though the honey is sufficiently concentrated it may still ferment—if it happens to be contaminated with yeasts that are able to cope with these conditions.

When crystallization occurs, the chances are even greater that spoilage will follow. For an understanding of this we must recall that honey is composed mainly of two sugars, glucose and fructose. The glucose is the sugar that crystallizes and settles; the fructose remains in solution. At the surface of the honey we find fructose, a sugar very easily fermented by the yeasts, and a higher moisture content than we formerly had when the glucose was not in crystalline form. We therefore have yeasts not only present in fructose—a sugar they can readily ferment—but present with more water than they formerly had. The result is crystallized honey, a medium in which the yeasts may grow readily.

Still another factor influencing yeast growth in honey is the temperature at which the honey is stored. Yeasts cannot grow at all temperatures. If honey is stored at 52° Fahrenheit it will be too cold for the yeasts and they will not grow—even if the factors mentioned above happen to be ideal.

If it is inconvenient to store honey at such a temperature it may be rapidly heated to 160° F., placed in containers while hot and cooled very quickly afterwards. This destroys the yeasts.

In case of spoilage, it is suggested that you do not throw the honey away, but rather convert it to honey vinegar. Write to the Michigan State College of Agriculture and Applied Science for full particulars (Extension Bulletin No. 149, October 1935).

—ABJ—

Fortune in "The Bee Business"

THE title quoted above, "The Bee Business" appeared in the June issue of Fortune magazine. The staff writes about the beekeeping and honey making industry. We are in receipt of a copy of that issue and also a separate sheet from Otis Peabody Swift of the Fortune organization. This is an unusually well written and accurate account of our industry with fine illustrations, four in color, beautifully done and accurate.

There are so many inaccuracies in the usual popular articles about bees that we hestitate to call attention to the few minor statements to which we might object in this splendid presentation. The article brings up the oft quoted total of 800,000 beekeepers in the United States, "ranging from hermits in the hills who keep bees for company, to big western producers who have chains of apiaries extending over as many as three states."

We only question the total of 800,000. There may be more or there may be less. At the time this figure was obtained as a census figure, it represented only a part of the total number of beekeepers. The interest in bees may be temporary or it may be permanent and so, as a figure representing the total number of permanently beekeeping minded individuals, it is probably too high. Our guess is that 500,000 would be more exact.

It is to be hoped that beekeepers will listen to what is said about the "immense fortunes" piled up by the honey packers. At least, that is what so many of us think. Two of the largest packers in the country, however, in this account report very moderate returns from a large volume of business. Any other commodity might well have yielded considerably better. One, with an annual volume of 10,000,000 pounds of honey, is estimated to have made only $35,000 net returns. Another, with an annual volume of about 4,000,000 in one year, netted only $20,000 from its operations. The producer, at the usual carlot price of honey with this amount of volume, would do as well. Of course, such a volume of production is almost impossible to obtain for the majority of beekeepers.

The article does not give honey an outstanding place in the diet. We quote, "The roster of honey's uses is endlessly diversified. Jellies, butters, and preserves are made with honey. Pipes and leather are cured with it; and meat packers are experimenting with honey-cured meat. Some fine liqueurs have honey as an ingredient. Jewelers use honey to darken natural onyx. Honey adds flavor to cigarettes and chewing tobacco. And because of its resilience a carload a year goes to make centers for 1,500,000 golf balls. It is used in medicines to disguise evil tasting ingredients and it is a popular home remedy for colds.

"To the more rabid nature fetishers, honey ranks pretty close to herbs as a dietary essential. But to the medical profession honey is no more essential to diet than any other highly assimilable carbohydrate. It is being used in place of lactose, dextrose, and maltose combinations in modifying cow's milk for infants and as a substitute for refined sugar in diets for the aged. Being composed of simple sugars, such as occur in fruit and vegetables, honey is more easily absorbed into the system than processed sugars. As for therapeutic properties, none save a mildly laxative quality is recognized in honey by most physicians."

To be sure, a lack of authentic information would make it difficult for one not a dyed-in-the-wool producer or a honey distributor to give honey a higher place than this. We have always felt that one of the most needed things is a thorough dietetic study of honey. Until we get it and have something upon which to base our claims,

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Four Years of Beekeeping in Hawaii

By H. E. Coffey.

Aloha tower is known to all who have been in Honolulu. This is where passengers disembark while the Royal Hawaiian Band plays.

NO doubt you know that Hawaii is an organized territory of the United States with a governor appointed by the president and a legislature elected by the people. The eight inhabited islands contain a little over 6,600 square miles of land surface and lie in a neighborly chain at about the same distance north of the equator as the tip of Florida. The beekeeping islands of the group, ranked in order of their importance, are: Molokai, Oahu, Maui, Niihau, Hawaii, and Kauai. On the last named island little commercial honey is now produced. Some domestic bees are also kept on Lanai and at one time Mr. Oswald St. John Gilbert made an unsuccessful attempt to keep bees on Kahoolawe, the most wind swept of the group.

With perhaps the exception of some clay deposits and rock materials the islands have no natural resources. It is on tropical agriculture that the wealth of the territory depends. Sugar is the most important crop of all and second is pineapple. No place in the world quite equals Hawaii for uniformly good pineapple. The growing of coffee, rice, macadamian nuts, avacados, bananas, potatoes, tobacco, and other crops are all of minor importance. But ranching is carried on quite extensively. The Parker Ranch on Hawaii which Will Rogers so enjoyed visiting is one of the largest in the world. But all this is not about beekeeping.

When I sailed out of Golden Gate harbor on the Lurline on that May day of 1933, I was headed for the unknown. Not only did I know nothing of the geography of Hawaii, but of more concern to me, I was bound for a "new world" in so far as beekeeping was concerned. I had never read so much as a line about beekeeping there. I had never interested myself in the place. It had registered in my mind, as with so many others, as a mere dot of land in the ocean that somehow was claimed by Uncle Sam.

I, therefore, cannot describe to you my feelings and emotions when, on the fifth day at sea, in the early morning, we first glimpsed Molokai; then Oahu's Koko Head; then historic Diamond Head; and lastly Honolulu Harbor's famous old Aloha tower.

The sun gave rainbow hues to the shallow coral reef waters off Waikiki beach. As we docked strains of welcome greeted our ears from the Royal Hawaiian band. Beautiful, brown skinned, grass skirted maidens danced for us in their bare feet. Most all the passengers were being greeted by friends who loaded their necks with fresh flower leis (wreaths). No one in all that throng—in all the islands knew me. But I was soon to find Honolulu a friendly place. After going to the Young Hotel I became acquainted with a kind old gentleman who drove me about town pointing out things of interest.

I came to Hawaii at the beginning of the honey season. The algaroba honeyflow was in full blast. It was a pleasant time to begin. My helpers were Japanese who spoke "pigeon" English, but I soon learned to understand them. On my journey I had pictured sitting under a waving palm directing Japanese help. When we move to new climes do we not all hope for greener pastures?

My helpers had never seen a haole (white) beekeeper who worked. Obligingly they opened the hives for me and pulled out the brood combs holding them for me to look. But I soon changed all this for I did not look long until I saw American foulbrood. I could not determine whether or not my helpers fully understood how to recognize foulbrood. The lead-

An example of the palm-lined roadways over which one travels to the bee yards.

Bee yard at the forty year old Gilbert Station, Oahu Island.

Diamond Head—heavily fortified historic landmark of Honolulu harbor.

These ships now make it possible to cross from Alameda, California, to Honolulu in 18 to 20 hours.

er among them was an old man and I could tell that his sight was not good. Immediately I began and inspected those 1800 colonies myself while my helpers supered the colonies that I marked, put foundation in frames, etc. I shocked the natives. The old Japanese man was so surprised that finally on a week-end he got gloriously drunk on sake and okoloeha and resigned.

That first season with Japanese help I produced less than 600 cases (120 lbs. per case) of honey. I was told that the usual production was one thousand cases.

From the beginning my fight was to conquer American foulbrood in a land most favorable to its extermination and yet most favorable to its spread. What is the meaning of this last phrase? This. Hawaii has no cold season to compel bees to use up stores. Most every day in the year enough nectar comes in to sustain the colony. With American foulbrood honey in the combs one never knows when it will be used and the colony come down—perhaps in a month—perhaps in a year. It takes continuous, persistent inspection to weed out American foulbrood. But if labor is not considered, it is an easy task. Some apiaries that in the beginning were badly diseased for almost two years now have been entirely free of American foulbrood. I could accomplish this because robbing in Hawaii is not as bad as in the States and I could inspect bees every day in the year.

I am a believer in practical economy and efficiency. If I operated a farm I would keep well painted buildings, well repaired fences and well cultivated crops. Such is part of my nature whether I labor for myself or a corporation. It is industry that marks success in any undertaking. I found a bee business in a heartless state of disrepair. By the end of the fourth season I had placed 2200 colonies in good usable repaired equipment on wired combs and rioted American foulbrood to less than 4 per cent.

Needless to state with the large percentage of foulbrood I began with, I considered it impractical to burn the infected colonies. Equipment was boiled and again put into service. I know, however, that burning is cheaper where apiary inspection is in force and where the percentage of American foulbrood colonies is not great.

There is practically no European foulbrood in Hawaii, but sacbrood is very prevalent due perhaps to the continuous brooding season, or to lack of nurse bees at certain times.

I found bees to dwindle badly during winter. However, some colonies maintain their strength. This leads me to believe that young and vigorous queens are the ones that bring colonies through strong, but lack of pollen may also be an important factor. Surely Hawaii would be a favorable and fruitful field for research. Because of the continuous season breeding experiments would gain great advantage in time.

I had the usual tropical problem of ants to contend with. They are worst in winter. Our only means of protection was to keep colonies mounted on stands having four nails projecting upward on which the bottom board rested. The nails were kept greased. This worked fairly well but sometime there will be a better plan invented.

Buffo toads, imported to combat Japanese beetles, are spreading rapidly in the islands and are likely to become a problem for the beekeeper that will require him to keep his bees on high stands, fence his yards against them or adopt the much disputed top entrance.

In my four seasons in Hawaii I was able to see our honey production climb. As I stated, it began with less than 600 cases and grew to over 1300 in 1936. I learned that I could not stack up supers of honey and wait for the end of the flow but that with a grand rush one must begin to take off honey as soon as sealed. I found that apiaries that were robbed at least three times during the honey season made the best showing.

I tried making increase in the autumn and it was a failure. There is but one time to make increase in Hawaii and that is during the spring months as the first algaroba begins to

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Algaroba trees at Gilbert Station, Oahu Island.

There is mountain scenery all along Oahu's paved highways.

The First Spring Honey Week

PERHAPS it would be well to review the previous Honey Weeks and the steps leading to a shift in seasons for such a promotion.

The Institute had promoted six honey weeks up to 1936. Careful records showed that it took three years of persistent effort to get producers cooperating on a basis that made Honey Week really national in scope. Each year brought a maximum amount of cooperation in one special field; for instance, 1932 was outstanding because more than $10,500 worth of radio time was devoted to honey by the allied trades. Likewise, 1933, was outstanding because more than a thousand newspaper clippings on the use of honey and recipes came from newspapers in the forty-eight states. And so, if time permitted, each year could be listed as showing a marked type of cooperation from a particular field.

By the time the 1935 Honey Week was over, the Institute realized that the promotion had now become routine and the trades as well as producers were taking for granted that each fall Honey Week would come and some type of cooperation was planned.

Each spring the government reports showed a slow, dull period—always "honey is not moving—no demand—no buying."

The Institute saw what it thought was a way to remedy this situation. Why not shift Honey Week dates and use it as a merchandising plan during the so-called "dead season." The term Honey Week was established — the trades knew how to sponsor and promote it. All that needed to be done was to announce a shift in dates.

But producers complained — we have our big supplies of honey in the fall and that's when we want to promote its sale—many of them wrote the Institute thus. So the first step was to design a promotion at a time that would satisfy them. The Honey Harvest Festival came in October of 1936 and for its first year, it brought worth-while cooperation from beekeepers, especially the auxiliary ladies. Producers were satisfied—they had their **fall** promotion. Now then, how about the packers—when did they have honey on hand. Surveys showed that most of them carried supplies over into the actual harvest season of the following year, previous to 1936. This permitted them to say to producers shortly before or after the current harvest, that honey did not sell, they still had some on hand from the year before, and unless the producer was willing to sell at the price set by the packer, he just did not sell his current harvest. And it was true that many packers had not previous to 1935 found a market for their honey during the spring and summer months.

The Institute's recipe service to the consumer is changing this picture. Gradually there is taking place a consumer use of honey during spring and summer months. And why not, isn't honey just as good a food during these months as it is at any other time!

Anyhow, the Institute promoted its first Spring Honey Week April 19 to 24. The activity reports are just now coming in and what an amount of interesting data they contain. It seems that a number of producers held their honey last fall for higher prices than the buyers would pay and those producers found themselves this spring with supplies of honey on hand that they had not anticipated they would have. They welcomed the sales such a promotion as Honey Week would bring. Did they cooperate? Yes they did and to their own profit!

Then, the packers saw in the spring promotion an opportunity for them to move considerable honey through the grocery trade. The grocery trade journals carried announcements and suggestions as to how their clients might capitalize on the promotion. And of all the types of participation that took place this spring, the grocery cooperation was probably the most outstanding.

While the bulk of reports are not yet in, the following listing made less than twenty days after Honey Week was over (May 4th, to be exact) will give you an idea of the scope and variation in promotion efforts our members and friends gave to this program.

This excellent cooperation is due to the ground work laid during the promotion of the six previous honey weeks and the fact that Honey Week came this year shortly after Lent. With the decreased activity that Lent brings both socially and professionally, the trades welcomed the opportunity of cooperating in the telling of such a fascinating and romantic story as is possible with a subject such as bees and honey.

Members Cooperation.

Institute members in 23 states purchased **5000** Honey Week Streamers for use in **store displays.**

In addition they secured radio continuity, newspaper articles, recipe leaflets and a special Honey Week Menu and Recipe folder for use in their Honey Week promotion.

Syndicated Newspaper Releases.

In addition to the copy the Institute sent to the 500 home page editors located in the 48 states, the following companies made special releases on Honey Week, combining the use of honey with their own trademarked products. To date their reports indicate a circulation of this honey copy in newspapers having a total circulation of more than **ten million.** The syndicated copy was published in newspapers located in every state.

Outstanding among these releases were those sent out by:

Owens - Illinois Glass Company through their publicity agent—Modern Science Institute—who by the way have just made another release giving a recipe for honey wine drop cakes.

Pillsbury Flour Mills—a Mary Ellis Ames syndicated release.

Kellogg's — a Barbara B. Brooks release.

The Call-Bulletin (California)—an Ann Welcome release.

Hearst Publishing — a Prudence Penny release.

Chicago Tribune—a Mary Mead release.

Boston American—a Martha Lee release.

Newspapers clippings have been received from 15 states showing the actual use of these syndicated releases.

Marketing Divisions of State Departments of Agriculture.

Four states have sent tear sheets of their releases to daily papers within their state and reported radio broadcasts.

Bakers.

Seven states—reports direct from bakers.

Advertising Agencies.

Agencies in three states have sent reports of programs they prepared for their clients on honey.

Magazines.

Tear sheets from five have been received—the total circulation of these five is around three million.

Cafeterias.

Three have reported the serving of special Honey Week combinations.

Chain Stores.

American Stores Co., Philadelphia, reported special displays, newspaper advertising and distribution of house to house circulars.

A. & P.—store displays and honey recipes in their Cost Menus distributed at all stores.

Krogers—store displays.

Radio Programs.

Fourteen states reported the use of Honey Week continuity.

Reports from Units of the Ladies' Auxiliary.

Members of the Ladies' Auxiliary have reported programs in six states.

Dairy Cooperation.

Three dairies reported honey week tie-ins.

College Departments.

Eight college bee departments reported special Honey Week programs.

Miscellaneous.

Many of the home service directors for gas and electric companies wrote for demonstrator's outlines, recipe books, and indicated that special honey recipes would be demonstrated to their classes during Honey Week.

Newspaper cooking schools included honey in three states.

Such items as lessons on bees and honey in the schools, talks before professional and social clubs, and talks to varied groups are too detailed to list.

It must be remembered too, that many of the Institute's correspondents write for material to develop Honey Week, but do not take time after the promotion is over to report on their activity.

—ABJ—

Death of Mrs. E. R. Root

THOUSANDS of beekeepers will be sympathetic with our good friend, Ernest R. Root, of the A. I. Root Company and Gleanings in Bee Culture, over the loss of his wife, Elizabeth. Mr. and Mrs. Root had just returned home to Medina, Ohio, from San Antonio, Texas, when Mrs. Root became ill of influenza, which led to more serious complications and to her death.

Mrs. Root was born in Wellington, Ohio, April 17, 1864, coming to Medina when a young woman to the office of the Root Company, where she was married to Ernest Root, December 15, 1885. They had celebrated their golden wedding anniversary a few years ago.

Mrs. Root traveled extensively with her husband on his speaking and business trips. Her high literary attainments and fine business ability went hand in hand with the accomplishments of Mr. Root.

In reply to correspondence with Mr. Root over the loss of his wife, he says, "It will be hard for me to adjust myself to the new situation. My son and family have a home of their own and so the old home where Mrs. Root and I have spent so many years must be broken up. Her handiwork is everywhere. I have no reason to complain, as I have had her by my side for 54 years."

We agree with Mr. Root, an adjustment like this in late life is hard and we are glad that the circle of friends and relatives at Medina are at hand to make the period of adjustment an easier one. Our sympathy to Mr. Root in his bereavement.

—ABJ—

Pictures—*For Everybody*

All those who have sent pictures that have been retained for use, please read this carefully, particularly the announcement about the awards for the pictures to be used. Previously, books were sent those whose pictures were kept to be published, but then subscription extensions were also added. Contributors made their choice when they sent their pictures.

Originally, the contest was for a choice of pictures for the cover only. It was not expected that there would be a great number of successful contestants. Something has happened in the field of amateur photography, however. Cameras are more accurate, pictures are better, the subjects are numerous, and so it can easily be understood that a great many pictures were received which were hard to send back, although only a few were necessary for the cover itself. To accommodate the acceptance of numerous pictures, therefore, we decided to use them either on the cover or on the inside pages with the same offer of books and subscription.

It has become apparent that either measure is not enough. We should encourage the presentation of the finest possible pictures, and so, we have decided to establish a new basis of award.

New Awards for Pictures.

Pictures to be used on our front cover must be of exceptional human interest and unusually good in photographic merit. We will give $5.00 for each successful picture and continue the contest for cover pictures, so that material enough will be available, not only for the balance of 1937, but for the entire year of 1938. Only the best pictures can possibly hope to be placed in this class.

All other pictures suitable for publication will be purchased for $1.00 for each picture and the contestants may also have their choice of any book published by American Bee Journal, or they may have their subscription to the Journal extended for one year. A list of books will be sent with the acknowledgment of the pictres which succeed in this contest.

The Picture This Month.

Little Betty Ann Peter at sixteen months of age takes her first lesson in beekeeping. The picture was sent in by Mrs. H. Peter, Bound Brook, New Jersey, and was taken in the spring of 1936. Betty is always among the bees, no matter how often she gets nipped. She was not aware of her picture being taken.

Mr. Peter owns twenty colonies as a sideline, starting beekeeping six years ago, and now considers it not only exceptionally interesting, but decidedly profitable, as he has built up a good commercial honey selling route in Newark, New Jersey.

"We are both planning to have a few hundred hives gradually, as we have five young beekeepers in our family. We are both properly initiated by getting stung time and again during the season, but a dab of ammonia and the pain stops, so I don't pay much attention to the stings. I will be tickled pink if one of these pictures should win. Hoping Lady Luck will be with me."

Mrs. H. Peter,
Bound Brook, N. J.

We write individually to all who submit pictures, and so, no attempt will be made in this column to make any announcement previous to the publication of pictures. If you are interested in this contest, just get busy.

CARTER GLASS

Distinguished Virginia Beekeepers

—*Senator Carter Glass*

By A. D. Hiett,

Virginia.

"I DON'T want to be put in jail because I can't control the activities of my queen bee," made nationwide news because it was spoken by the veteran senator, Carter Glass, on the floor of the U. S. Senate during debate over marketing agreement for queen breeders in July 1935.

The senior Senator from Virginia is a native of Lynchburg and in addition to being a leading statesman of the day, is a beekeeper of the famous Piedmont region. The graceful home of the Senator, as pictured, overlooking a sea of rugged hills is in the midst of the 450 acre highland farm on which the bees are kept. The five or six colonies have become a valuable part of the diversified farming operations successfully managed by R. W. Kash pictured at end of dairy barn with those slick German police puppies; or are they?

As indicated by the quotation above Carter Glass is not an authority on bees and it may be possible he has even missed the thrill of being stung, nevertheless he knows the value of bees on his farm. They furnish the fine comb honey for the Senator's family table and that of his farm manager. Many visitors are delighted with this sweetest of gifts produced on the farm of their renowned friend. Then, too, the bees are needed to pollinate the home orchard, vegetable and flower gardens, and are of no little interest to visitors and friends.

R. W. Kash, manager for Senator Glass. The photograph shows a portion of the dairy barns. In the foreground, with Mr. Kash, two German shepherd pups.

Home of Virginia's Senator Carter Glass.

The fine herd of sixty pure bred Jerseys tops the lists of farm projects. Looking around we find horses, mules, hogs, sheep, goats, turkeys, geese, ducks, guineas, chickens and pigeons, all of some pure bred type. Careful management has made the soil very productive as indicated by growing crops at all seasons. More than two thousand bushels of small grain threshed annually alone spells successful farming.

But these are trivial things in the life of Virginia's beloved senator. From railway clerk, newspaper editor and publisher, he rose to state senator then to representative to Congress. Under Woodrow Wilson he became Secretary of the Treasury and since that time, serving the nation as a senator from Virginia, Carter Glass has become a true American statesman, honored by friend and foe for his sturdy and fearless adherence to principle as determined by the conviction of his own conscience. The admiration, respect and loyalty which Virginians hold for their honored son was most fittingly displayed when in his seventy-ninth year Carter Glass was re-elected, without opposition, November 3, 1936, to the Senate of the United States.

Lives of Famous Beekeepers

By Kent L. Pellett, Iowa.

A. I. ROOT—1830-1924

A. I. Root was remarkable not in one way, but in many ways. His was a many-sided character—Inventor, writer, manufacturer, publisher, thinker, philanthropist, reformer, moralist, agriculturist, Christian—he not only made two blades of grass grow where only one grew before, but he was gifted with the ability to make things grow where they had never grown before. *W. B. Baldwin in Medina County Gazette.*

A. I. ROOT, of Medina, was the first man in Ohio to own a velocipede. It was in the early seventies. He read in the Scientific American of these two-wheeled French machines that a man could ride. He ordered one from France, although it cost one hundred dollars, and the transportation charges were a sum in addition. He was a beekeeper and owned a struggling supply business that took all his ready money; but he never was able to turn aside from anything new.

The velocipede arrived, but Root could not ride it. Neither could anybody else. Not many could be induced to try it, although many were able to explain to Root why a two-wheeled contraption like that could not possibly stay upright with a man on it. A crowd assembled and enjoyed his attempts to handle the strange vehicle. They had no end of fun at his expense, and reminded him that a fool and his money are soon parted. Sensible men gave him sensible reasons why a velocipede simply would not work. Root had startled his neighbors with ideas before. Now, people can stand being startled occasionally by feats of strength, but they simply will not tolerate being startled by new thoughts.

Root tired of his audience. He hired the largest hall in town, took there his machine and a boy who wanted to help, and locked the door. There, with much effort and nervousness and sweat, they learned to ride. They rode not only straight ahead after awhile, but they turned corners. Then, master of his steed, Root went out into the street and rode around the square, treating his neighbors to the spectacle of the first successful bicycle ride in the state of Ohio.

A. I. Root always did startling things. He often visited the Wright brothers when they were working with their flying machine, and he watched their first real flight in the air. He suggested that he might ride as ballast in front! He went home and wrote for his magazine, Gleanings in Bee Culture, what he had seen, and predicted the airplane would change the transportation of the world.

Root devoted much of his space in Gleanings to God and religion and human appeals. He printed letters from a little blind and deaf girl of eleven years who had learned all she knew through her finger tips. That was Helen Keller who later became world-famous for her feats.

Root helped to launch the Anti-Saloon League, putting $500 of his own money into the baby organization to start it off. It was a small band of dreamers and reformers intent on the destruction of the great liquor trust. People laughed while glasses tinkled by night and day. But the Anti-Saloon League grew and grew while saloon after saloon was closed. Prohibition through the long years came to state after state, and at last was driven into the constitution itself. The League moved into Washington and set up one of the strongest lobbies ever seen in the United States. The rise of the Anti-Saloon League which Root helped to father is one of the most amazing stories ever told. Its decline and fall, with every law it ever stood for being swept out of the capitals of the nation, is even more amazing. But when Root died in 1923 prohibition apparently was secure.

In the fall of 1885 A. I. Root went to the national convention of beekeepers at Detroit. His magazine and his supply business both took him into the public eye, and he had the feeling of one who suddenly finds himself famous. People would whisper, "There goes Root." A man utterly lacking in distinguished appearance, he hardly knew how to act or what to do.

In one of the sessions W. F. Clarke rose with a paper box in his hand and said: "Will A. I. Root please stand up here before me and look me in the face?"

Root came forward and Clarke said: "Brother A. I. Root, we, the beekeepers of North America, in recognition of your services during the years that have gone by, not only laboring for our temporal good, but in view of the energy and zeal with which you have toiled for our spiritual good as well, do hereby tender you this book. We do not all of us endorse all of your peculiar doctrines, neither do we think exactly as you do on many points, but for all that we know you have worked honestly, faithfully, and unselfishly, and in view of this we take pleasure in handing you this small testimonial of our esteem and friendship." And he presented Root with a copy of "Paradise Lost."

Clarke's little speech summed up well the attitude of the beekeepers toward A. I. Root. He was bursting with new ideas. Most people like to change slowly, with plenty of time to absorb new thoughts. Root moved from one project to another so rapidly that he gave the beekeepers mental indigestion. They did not "endorse all his peculiar doctrines." But they recognized that he had in his wizened body a tremendous dynamo that was giving a great push to the little industry. If there was anything new in beekeeping A. I. Root was one of the first to see it, and to get behind and shove.

Root had another characteristic just as strong in him as his leaning to hobbies. That was his ability to make these hobbies pay. E. R. Root, his son, said after his death, "The strangest part of it was that he made all of these hobbies pay dividends not only in experience but in actual money. His watch repairing business paid;

his jewelry manufacturing business paid; his bee business paid; his gardening paid." He kept his eyes on the pennies in riding all his hobbies, and well he might, for he often found his finances spread out dangerously thin in the early days of his magazine and supply business, due to his love for new projects. Perhaps because of his desire to make money, perhaps because of his lack of physique, he never did care for games of any kind. Baseball, croquet, tennis or any other of the popular games of his day had no appeal to him.

Amos Ive Root was born near Medina, Ohio, in December 1839. Medina was where he first went to set up a jewelry repair shop and where he later built his bee supply business. He was the fourth of seven children, and sickly as a boy. His father said he was of no value for field work, so he helped his mother raise the garden. Amos did not like physical effort, and used his head to get out of work, rigging up the windmill to churn the butter for him.

Young Root was not rated the best student in his classes at school. He insisted on putting his lessons into his own words instead of memorizing them as his teachers told him. This was not looked on with favor.

He abided his lessons, but he became absorbed in chemistry and electricity. He and another boy set up a laboratory in a vacant shed, where, with what contrivances they could get together, they performed experiments. When an electricity show came to town Amos insisted on going, even though it happened to be the evening of his sister's wedding. The family refused to excuse him from the ceremony. He made such a racket that at last the hour of the wedding was set ahead so that he could attend both the show and the wedding. Later he staged a show of his own at a school house, and packed the room with people who were willing to pay to see his experiments.

Young Root did not attend school after he was sixteen. Instead, as his ambition was to get away from the farm, he taught school for a year or two.

He was interested in a young farm girl named Susan Hall who lived near Medina. He was so attentive that Susan found her studies being neglected. She dismissed him, telling him they were both too young to be serious. Later Root related that instead of drowning his sorrow in liquor in the common manner, he decided to turn his back on it by entering a career. With a full beard that would have done credit to a much older man, he became Prof. A. I. Root and gave lectures on electricity and chemistry. His father gave his consent when Amos decided to go on the road on a lecture tour, but complained that he probably would have to send him money to come home. Amos determined to pay his own way. One time he walked twenty-four miles in the night to borrow money from his sister. Another time he had to leave his equipment in a hotel for lack of money to pay his keep, but in spite of difficulties he returned home a year later with more money in his pocket than when he had started out.

Again he went to see Susan Hall, and began to cast about for a more permanent means of livelihood. They were married in 1861. His father-in-law feared that Amos never would be able to make a real living. Root decided to open a jewelry repair shop in Medina. The two shops already there were not kept busy. People said an inexperienced young man running a third one would starve. But Root got a ladder and hung up a sign over a vacant store building. While he was still on the ladder a man stopped with a watch for him to clean. He boasted later that he never ran out of work after that. He fixed door bells, umbrellas, parasols, coffee mills, and sometimes charged only five cents for two hours of work because he wanted business. He made an effort to get work out promptly and was soon working evenings, as well as days. The repair business thrived and in the course of time it developed into the jewelry manufacturing business which he conducted in Medina for many years. Here he employed a dozen people. At one time his building burned down, and he moved the factory into his house.

As a joke one day Root offered an employee a dollar for a passing swarm of bees. To his surprise the man caught the bees. Root put the swarm in a window where they felt the heat of an afternoon sun, and they left unceremoniously to seek a cooler abode, but not until they had aroused in him a desire for a new hobby. He spent two days on a trip to Cleveland to get a copy of Langstroth's book, "The Hive and the Honeybee." He was captivated, and related that as a boy he had enjoyed "Robinson Crusoe," but his elation had been nothing compared to the thrill of Langstroth's book. He got another colony of bees, and set up an observation hive. When the bees started to make a queen cell, he watched over it about as closely as they did. Somewhere he read Langstorth's advertisement for Italian queens and ordered one, although it cost him twenty dollars. He talked bees to farmers who came into his store, and wearied them as he pumped them dry of information on the subject.

Root heard Samuel Wagner had been publishing a bee paper but that he had dropped it during the Civil War. He importuned Wagner to make another start with it. When the American Bee Journal did get under way again, Root became one of its most frequent contributors, under the name of "Novice." The steps from an apiary to the bee supply business and the publication of his own magazine, Gleanings in Bee Culture, followed for him in the natural train of events.

Root received so many letters and questions from his articles in the American Bee Journal that he conceived the idea of issuing a circular with answers to the most frequent questions to save the labor of writing. This was the plan when the first issue of "Novice's Gleanings in Bee Culture" was published in January 1873. It was a little eight page circular, and was to be issued quarterly, to cost twenty-five cents a year. But there was so much interest in that first issue that Root enlarged it, changed it to a monthly publication, and raised the price to seventy-five cents a year.

The first year Gleanings was printed in the shop of the local newspaper, the Medina Gazette. After that Root got a press and printed the magazine himself, using his windmill for power. When there was no wind he treadled the press by foot. The windmill often turned too fast and he had difficulty in feeding the sheets into the press. He explained to his readers that the frequent crookedness of the pages was due to the fact that he could not control the speed of his windmill.

Root was already in the supply business. With the help only of his son, Ernest, and the windmill, he was filling orders for bee supplies. And the business grew rapidly so that he soon was employing other help. In nearly all the improvements in beekeeping in the twenty years following the birth of Gleanings, he had a hand.

He made honey extractors, first of wood and then of tin. For propelling power he had a crank and gearing of a malleable iron apple parer. He recorded that he extracted, weighed and sealed 285 pounds of honey in three-fourths of a day with his machine. His apiary was growing and in 1870 he was prepared for 2,000 pounds of honey. But by June 15 all the jars were full and he borrowed all the wash boilers in the neighborhood while waiting for more jars to come. He filled these quickly and hunted more wash boilers. The bottles did not come, but the honey did. On Monday the women of the neighborhood could not wash, because their boilers all were full of honey. Root secured 6,162 pounds of honey that season. He soon had a honey extractor on the market that he had

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Lespedeza for Honey

By Edgar Abernathy,

North Carolina.

HONEY comes largely from Korean lespedeza, with possibly a small amount from the common Japan clover. Kobe is also grown in this locality, but bees do not visit it. They work the Korean vigorously, however, and the common to a certain extent, but the blossoms of the latter are small, and not much is grown locally in comparison with Korean.

The honeyflow lasts for two weeks or more during the last of August and first of September. The blossoms yield only about half of the day, and then wither. Throughout the morning and, on damp days, part of the afternoon, the bees work as vigorously as during any other honeyflow. The air in front of the hives is black with bees, and the lespedeza fields are covered with them; a continuous humming pervades the air. On bright, fair days, this continues until about one o'clock; after that hour, work rapidly declines, and very little is done until the next day's crop of blossoms is ready.

My experience includes only three years; one of these was a complete failure owing to drought; the others were practically normal, although excessive rain interfered with the honeyflow this year. Only my "best colony" in each of these years succeeded in storing an appreciable surplus, about twenty pounds in each case. The others, though apparently quite as strong or even stronger, lacked the vigor necessary to take advantage of the light, short flow; it was over by the time they became well established in the supers.

I do not believe large yields of comb honey will ever be secured from this plant, except under exceptionally favorable circumstances, but producers of extracted honey should find it more valuable. It is valuable in this section, too, because it comes at a time of great scarcity of nectar; it helps to tide over the slack season between the early summer and the fall flows.

In quality, the honey from this source is exceptional; the bright golden color is attractive, and the delicate flavor is unequalled by any other local honey. All who have eaten it unite in giving it top rank, even ahead of sourwood.

The past season was a most unusual one, replete with extremes of every kind. Normal weather was seldom encountered, but, as the net result was a phenomenal yield, local beekeepers are not complaining.

In giving a review of the season, I shall begin with the fall of 1935, because it is my belief that the beekeeping year begins then, rather than in the spring. Throughout October the weather was warm and fair; asters yielded abundantly, and bees packed the hives with well-ripened honey.

The winter which succeeded was the most severe on record; never before had local beekeepers encountered such consistently low temperatures, so much snow, and so little sunshine. Colonies unprotected by wind breaks fared badly, many freezing, though the hives contained ample stores. My bees, however, had a thick hedge for a wind break; the only packing I gave was a super of leaves on top. This was ample, though, for every colony came through in good shape.

The spring was excessively wet, and somewhat colder than usual; not much work was done on the maples, fruit bloom, and other spring flowers. In spite of this disadvantage, ample stores enabled colonies to build up normally; when the honeyflow began, they were ready for it.

The rain ceased in April, and the succeeding two months were practically rainless and cloudless. When the main honeyflow began, early in May, the weather allowed bees to work without interruption. Throughout the long, sunny days, the bees hurried back and forth, adding to the stored-up sweetness in their hives. As our May honeyflow is derived mainly from trees, the drought did not affect it. Ample subsoil moisture allowed the secretion of nectar to go on unchecked. Swarm control was easy; with no bad weather to confine bees to their hives, they did not seem to develop the swarming impulse very strongly.

The sourwood is a shallow rooted tree; when it began to bloom late in June, the soil was very dry, and for a time it was doubtful that any sourwood honey would be secured. Just in time, though, bountiful rains fell, and the sourwood yield was fairly good.

Heavy rainfall throughout midsummer gave ground for hope that considerable lespedeza honey might be secured, but the rains continued through the blooming period in late August and early September. Lespedeza remains in full bloom little more than two weeks, and considerable rain during that time prevented much surplus. In fact, only my best colony produced any to speak of, about twenty pounds.

My average for the entire season was over seventy-five pounds of comb honey. That doesn't look large, compared with yields in high-producing sections, but, in the light of an average production for this section of around thirty pounds, it is phenomenal.

Heavy rains throughout October cut down the fall honeyflow; most colonies failed to store enough for winter. I fed all mine sugar syrup.

—*ABJ*—

Autumn Requeening

My big objection to late fall requeening is that, although the percentage of acceptance is high, every failure means the loss of a colony. Bees that are queenless through the winter might just as well be sulphured the next spring; they are useless. I have often united them with small queenright lots, but they never seem to benefit by the addition.

The risk is great and after all, one can never tell with any certainty what the proportion of success will be. Locality may have much to do with it. Even the kind of bees may have much to do with it. For me, it is a risky proceeding.

I am going to try an experiment this year. I am having twenty-five hive bodies made, the same outer dimensions as my present one, which takes thirteen British standard frames, but built for Modified Dadant size frames. I intend to put nuclei in them this year and build them up to full colonies. In 1938 I will put them in an outyard and leave them alone except for putting on supers and taking them off.

I seem to have so little trouble with swarming nowadays that I am going to risk it. We may lose a colony or two, but I do not think we ought to lose many. They will not be requeened except for those that give poor results or have bad characteristics. I shall let them requeen themselves, as quite a number of my colonies already do in their second year, as we know by the replacement of clipped with unclipped queens.

With a good non-swarming strain I do not see why "let alone" beekeeping should not be successful. One could run three times as many bees or more, and there ought to be more profit in it, although perhaps not so good an average return per colony.

A. W. Gale,
England.

EDITORIAL

Comb vs. Extracted Honey

The well known editor of a widely read magazine sends a letter to this writer to express his disappointment with the honey which he is able to buy in the market. He expresses himself forcefully to the effect "practically all the extracted honey I believe is unfit for food."

He assumes that when honey is unsealed and removed from the cells in which the bees have stored it, it loses something of importance. He refers to it as "airstruck." His letter states that he does not know what the effect may be but at any rate as far as he is concerned he is "all caught up on extracted honey for the future."

This letter appears to us to be important in that it expresses the viewpoint of the customer who buys our product in the market. It is written by a man well known from one end of the country to the other. Although he knows little of the problems of honey production he knows what he as a consumer wants and is willing to pay for.

There can be no question but that extracted honey soon loses some of the elusive fragrance which appeals so strongly to the palate. In our anxiety to increase the volume of our output and lighten the labor of its production, we unquestionably lower the quality.

When we abandon comb honey we relinquish a luxury market in which our product is supreme, to come into competition with the cheapest sweets which can be produced in unlimited quantity at low manufacturing cost. The beekeeper who is skilled in comb honey production is an artist who serves the industry by keeping alive that consumer interest which is essential to a prosperous business.

We greatly need a larger supply of the finest comb honey, put up in the most attractive package to serve this special demand. Without it we lose our most profitable market.

—ABJ—

Mrs. E. R. Root

A gracious and charming lady passed from among us when Mrs. E. R. Root died at Medina on June first. Few women are so well known among American beekeepers as Mrs. Root. In company with her husband she has traveled widely and attended many conventions. Hundreds have been delightfully entertained in her beautiful home in Medina and have come to feel that E. R. was very fortunate in his home life.

Quiet and unobtrusive she devoted herself to her home and family and was typical of the kind of women who make this old world a worth-while place in which to live.

A very wide circle of friends will extend sincere sympathy to Ernest Root in his hour of bereavement.

—ABJ—

Feeding Package Bees

Shippers of package bees should send along printed instructions for their care. Too often those unacquainted with the care of bees are unprepared to give them proper attention. If the buyer be so fortunate as to receive his packages when a good honeyflow is on they may become established with a minimum of attention. As a rule, however, the bees need to be fed for some time after arrival. At least they should be provided with an ample supply of sugar syrup which they can store in the hives to serve until plenty of forage is available from the field. Judging from the writer's experience the past spring the average package required twenty to twenty-five pounds of syrup in addition to what they were able to gather in the field. The necessity of abundant feeding should be more generally emphasized in order to avoid disappointment to inexperienced persons.

Bees in the Orchard

A prominent mid-western apple grower proposes a new basis for handling bees in the orchard. He suggests a cooperative arrangement which should be to the mutual advantage of both fruit grower and beekeeper and make each equally interested in the protection of the bees.

His plan is for the fruit grower to pay the first cost of bees and hives to be turned over to the beekeeper for all the year care. The beekeeper is to provide his own supers and meet any expense necessary for the management of the bees and to get all honey produced.

Since the fruit grower is interested only in the pollination of his fruit and the beekeeper interested in the honey harvested, both would get the full benefit of his specialty. With his money tied up in the bees, the fruit grower would naturally cooperate to the fullest extent with the beekeeper in aoiding any unnecessary loss through the application of poison.

Because of increasing difficulty in keeping bees in the orchard throughout the year, this man proposes that they be brought to the trees in time for the bloom and then be removed to other pastures for the remainder of the year, the beekeeper to do the moving at his own expense.

With investment in bees and hives covered by the fruit grower, it would seem that this arrangement might be advantageous to both parties. The flowering of a large orchard should give the bees a good spring stimulation, with enough addition to stores to cover moving expenses.

We would like to hear from both fruit growers and beekeepers as to their opinion of this plan. Perhaps other orchardists may be ready to make a similar arrangement.

—ABJ—

Old Ways for New

Recent years have brought revolutionary changes to American agriculture and some time may elapse before the farmer gets settled down to a normal procedure.

First the world war brought an insatiable demand for grains with the result that millions of acres which should have been left in grass were put to the plow. Already this unbalanced plan has resulted in disaster to large areas. In the so-called dust bowl the soil has blown away, and, in many eastern neighborhoods, it has washed and gullied once good land into useless waste.

Next the replacement of the horse by gasoline cars and tractors greatly reduced the necessary acreage of pasture with a similar result. With the collapse of grain prices there was a general shift of farm practice in an effort to find some means of meeting the situation.

The combination of drought and depression has resulted in the loss of their farms to many once prosperous owners, while others have sought new crops in the hope of bettering their prospects.

Soy beans are new to American farms, but in some sections of the Mid-west they are grown to the exclusion of other legumes. Lespedeza is finding a place in the rotation of a large section of the South as sweet clover has done in the Great Plains area.

In such an unsettled world the beekeeper is finding it necessary to do plenty of moving. He must be prepared to abandon neighborhoods where farmers take up crops which produce no honey and settle where conditions are more favorable. Unfortunately much of the change has been unfavorable to the beekeeper. Soy beans and lespedeza do not offer much to him. It is principally in the areas where sweet clover has been widely adopted that bee pastures have improved. Many of our friends write us from new addresses far removed from the former ones.

Honey for Hay Fever

Recent newspapers carry the report of work done by a physician in the United States army in treating hay fever with honey. According to the report which is credited to an article in the "Military Surgeon," Captain George D. McGrew, of the Army Medical Corps, found that patients received varying degrees of relief from eating honey and chewing the wax produced in the vicinity.

The observations were made at the William Beaumont General Hospital, in El Paso, Texas. It was assumed that the benefit came from the extraction of the pollen from the honey which came from the same kind of plants causing the hay fever.

It appears that to be of help to a patient suffering from hay fever, the honey should come from the same plants causing the trouble and for this reason only honey gathered in the vicinity should be used. In cases of plants such as ragweed, which yield no honey, the patient could hardly expect relief in this way, except as the bees accidentally mix the pollen with honey from other plants.

Some years ago a beekeeper, living in the Southwest, wrote to this magazine suggesting that honey might be helpful in some cases. Thus we find once more that scientific authority verifies the assumptions of the beekeeper.

Hay fever is a very serious and annoying disorder for an increasing number of people. If it should be found that honey served to bring relief to a considerable portion of this group, it would greatly increase the demand for our product during the summer season.

The work of Captain McGrew opens a field of far-reaching possibility and it is to be hoped that the matter will be fully investigated. Honey is such a pleasant medicine that few would object to the treatment. It remains to find whether it may be generally helpful over a large area or whether the result is of local significance and applies to honey from plants of limited distribution. The newspaper account fails to give any clue as to the possible source of the honey in this case.

—ABJ—

Don't Trifle With Disease

An inspector writes to say that articles on disease resistance help to retard clean up work. This should not be the case. If bees are resistant to disease they will not take it in the first place. If American foulbrood is once well established there is no reason to believe that the colony will ever recover without help from the beekeeper.

In our experimental apiary we burn any colony which does not show the ability to remove disease promptly. The only reason that resistant bees get it is because we put it in the hives. In ordinary practice they would not have it. Resistance is not a common occurrence. Only a few of the bees which have come to us because they were supposed to be resistant have proved their ability in this direction.

The greatest handicap comes from the fact that when resistant queens are superseded their daughters too often fail to inherit the quality and disease then makes rapid progress. While we feel that there is much of promise in the effort to breed a strain of bees which are resistant to disease, we would warn our readers not to take any chances.

But little is known of inheritance in honeybees and it is likely to require long and careful effort to insure success. A breeding project is now under way in the hands of trained men and we may well await the outcome of their experiments. They do not offer much hope of being able to solve the problem in a hurry.

Let us repeat what we have said many times before—Don't take any chances with American foulbrood. When you find it burn it.

—ABJ—

Securing a Pollen Supply

A most interesting suggestion is contained in a letter from Le Roy Jones, of Scottsdale, Arizona, who sends us a small bottle filled with pollen from the date palm. In view of the serious shortage of pollen at times, in certain localities, Mr. Jones sees in the date palm a possible source of supply.

Once the need is recognized some means of supply will be found if only there is sufficient market to justify the effort. The male date palm yields pollen abundantly, while the female palm yields none and in Arizona, at least, apparently yields no nectar. Since the date palm is pollinated by hand, only a comparatively small number of male trees are grown. However, in the Rio Grande Valley and other southern localities, the ornamental date palm is grown in large numbers and this might serve equally well as a source of pollen for the bees.

The sample sent by Mr. Jones comes to us in perfect condition, dry as powder and free from impurity. Several questions at once arise. It is to be hoped that those making investigation of the subject will ascertain how long such pollen can be kept in a dry state, what is the best manner to feed it to the bees and what quantity will be necessary to provide ample supply to carry a colony over the usual emergency.

There are numerous plants which yield pollen in abundance and from which a supply can be gathered, if the beekeepers find it to their advantage to pay the necessary price. In the Mid-west, corn is grown in large acreage and pollen could readily be secured in any needed quantity with the application of a little ingenuity on the part of the farmer. The ragweed likewise grows in waste places in sufficient quantity to provide pollen in abundance.

It is probable, however, that investigation will show that some kinds of pollen are more useful to the bees than others, but as yet we know but little about it.

—ABJ—

Cooperation

The terrible loss of bees caused by the spreading of poison in the control of pests, indicates the importance of beekeeping organizations working in close affiliation with other groups engaged in horticultural pursuits. No group is likely to encourage practice which is detrimental to those with whom it is closely associated.

Standing alone, beekeeping is usually regarded as a business of minor importance, but as a part of a horticultural organization it can make a strong showing.

There is little chance to stop the use of poison in the control of pests. There is too much at stake in the value of the crops threatened. With a proper understanding of the problem on the part of the public, methods of distribution of poison will be adopted which will cause a minimum of injury. The beekeeper must work with the fruit or vegetable grower or other farmer who uses the poison, rather than fight against him.

The plan of organization which has been adopted in Iowa looks to be a good one. There all the groups engaged in horticultural activity, including fruit growers, vegetable growers, nurserymen, beekeepers, florists, etc., are affiliated in one parent society, while each maintains its own separate unit.

In this way legislative matters are handled by the committee of the parent society in cooperation with a special committee of the smaller unit. With a total of several thousand members, it is possible to present a powerful influence in the state, yet as long as the present arrangement continues it hardly seems possible that any general practice will be permitted to develop which is objectionable to any special group.

Where the beekeepers can combine forces with these other groups they should be able to solve the poison problem. Working alone, they often find it difficult to secure a favorable hearing.

—ABJ—

Spring Pollen Shortage

Spring has been backward over much of the country this year. The first new pollen has been late and bees have been compelled to depend upon stores for a longer period than usual. As a result many colonies which apparently came through the winter in good condition have less bees now than were present in early March. The explanation lies in the fact that not enough pollen remained in the hives to permit normal brood rearing through the early spring. It is in seasons like this that the subject of pollen substitutes arouses so much interest. If some way can be found to meet such emergencies it will do much to insure a crop under adverse conditions.

Colonies or Packages for Orchards

By E. L. Sechrist,
Tahiti.

There is an editorial with this title in the October, 1936 issue, page 491, in which variations in results from the use of package bees and colonies of bees in orchards are mentioned, Farrar, in Massachusetts, is quoted that over-wintered colonies furnish more bees for pollination than packages; and Paddock that packages in orchards in Iowa have a flight equal to any colony.

Now here are two scientific experiments which should be comparable, but because the workers were not using the same conditions, the results cannot be compared. In California, we did considerable work on this problem. The experiments were in charge of Mr. Vansell.

Farrar in Massachusetts favored the full colony against the package. Paddock reports that the package has a flight equal to a colony. So we determined to find out why these results did not check. We had to assume that if the working conditions were the same in both cases, the results would be the same. Therefore, there must have been some factors in the two experiments which were not alike.

After numerous trials, Vansell found that the flight of any package or colony depends largely on the **need of the bees for pollen.** As soon as the queen in a package begins laying, the bees increase their flight. One could tell in which package a queen had not been released from the cage by the small flight from that package. As soon as we had eliminated this variable factor, we got comparable results. The rate of flight then depended on the bee population and the age of the bees together with their need for pollen, viz.: the rate of egg laying and the amount of brood to be fed.

The weather, too, must be taken into consideration as bees in dire need of pollen will fly actively in spring weather which would otherwise keep them in (presuming, of course, that the bees had in their hive sufficient nectar for immediate needs).

—*ABJ*—

400 Pound Scale Hive

My scale hive averaged over 400 pounds in 1936, although my average per colony was only 106 pounds with eight colonies and increased to sixteen.

My aim in 1937 is to get uniform colonies of standard honey producing strength and have my average a little nearer that of the highest producing colony. It may take more than one year, since queens must be considered too.

Eleanor J. Neale,
Michigan.

It Has Been Our Inspiration

By Florence M. Bennett,

Birkenfeld, Oregon.

Mrs. Bennett is State Chairman of the Oregon Auxiliary and also secretary-treasurer of the National Auxiliary. She is a hard worker and in addition to her auxiliary program helps take care of the bees. She and her husband have several hundred colonies and she is very enthusiastic about her fireweed honey.

TWO gangsters stood at the bar. They were both in a mellow mood. "Life sure is funny," mused the first strong-armed guy. "The boss pays me good money for beatin' up people he don't like—and yet I go around beatin' up my wife for nothin'."

The other gangster drained his highball.

"You beat your wife for nothin'?" he repeated thoughtfully. "What makes you work so cheap?"

The first gangster shook his head. "Because," he sighed, "I love her."

I quote this little story for I am going to verbally beat up for nothin' all the beekeepers, and honey bottlers, and bee equipment manufacturers, and bee culture specialists, and any one else connected with the honey industry in the United States who does not contribute to the support of the American Honey Institute. **Because, you see, I love them.**

No industry can survive, let alone become streamlined in this age of terrific competition, unless it advertises. The American Honey Institute is our chief source of publicity, but it cannot survive unless we contribute generously to its support. Yet thousands of people in the honey industry never contribute a cent to its support, and others only a very small sum in proportion to their production or income. Just a few who believe in paying for what they receive are bearing almost the whole load of the advertising for the industry.

I have a vision. It is to have a representative of the American Honey Institute permanently stationed in each state, or having the U. S.A. divided into areas and a representative of the American Honey Institute permanently stationed in each area. This representative would be qualified to give demonstrations of honey cookery and other honey uses. She would give demonstrations of honey cookery at the different state and county fairs, at expositions, in public markets, to 4-H club groups, etc. To bring this vision to materialization we must all become members, and most of us are in position to contribute more than we did in the past. Just a bare dollar from each of us will not bring about these big things we might have if only we were more loyal to our very own publicity department.

Last fall I was privileged to visit the State Association meeting of our neighboring state to the south, California. You know it is a big state, and a big honey producing state, and you have heard how it does things in a big way. I will believe all I ever heard of its bigness, because there I saw the American Honey Institute beginning to be treated in a manner that I thought was nearer right than the most of us are treating it. A great many California association members pledged themselves to contribute 3 cents per case of **all honey they produced.** Surely we might all do at least that much. Even that is a small amount compared to what other industries pay for advertising. But if we would all do that, it would certainly get us places.

There, I have told you non-contributors and semi-non-contributors, and I feel better, so I will proceed to tell of my own special work which is with the auxiliaries. Checking with Webster, he writes: "Auxiliary, means conferring aid." That's right. That's we. We are aiding the honey industry by teaching home makers how to enjoy using honey in the home.

I am the State Chairman of the Oregon Auxiliary and have been doing auxiliary work for two years. We did not get formally organized until last December. At that meeting Mrs. Lewis M. White was made Vice-Chairman and Mrs. Callie Osgood was made Secretary-Treasurer. We have seven county units. Through radio broadcasts, the press, demonstrations, distribution of literature, **and in ordinary chatter** we have dispersed many hundreds of honey recipes, and uses. We have been aided in all our work by suggestions, basic outlines, and leaflets from the American Honey Institute. **It has been our**

inspiration and guide.

At the International Conference at San Antonio last November a National Auxiliary was created. Mrs. Ethel Krebs of Sacramento, Calif., was made President and I was appointed Secretary - Treasurer. This National Auxiliary now numbers 110, representing 20 states and one Canadian province. I take this opportunity to urge all ladies in any way connected with the honey industry to join their state auxiliary and also this newly created national auxiliary. Charter membership in the national will be open until our next meeting in Washington, D. C., October 25-27. Anyone wishing to become a member send 25 cents initiation fee to my address which you will find at the head of this article.

What a Thrill—Receiving Prizes During Christmas Week.

And—and another thing I want to urge you all to enter our next National Honey Cookery Contest to be held at our meeting in Washington, D. C., October 25-27. All information regarding it may be obtained from the American Honey Institute, Madison, Wisconsin. It is fun to enter those contests. I entered for the first time last year, and won a prize, so I know you can also. The prize consisted of two cash awards, and several packages of food products from various food companies. It was really a dozen prizes in one. They began to arrive Christmas week. What a thrill it was opening them all. Remember when you were two, three, four, five, and six years of age, opening the packages left by Santa? The very same thrill all over again in your maturity if you are a winner in the Honey Cookery Contest.

Want a Heavy Date?

Quit standing by. Enter. And, girls, don't you want a heavy date? If you do just meet me at the National Conference of Beekeepers next October 25-27 at Washington, D. C. Drive, train, plane, thumb, or blinds. But, come. I'll be looking for you!

—ABJ—

Sweet Clover Conservation

By Elmer Carroll,
Michigan.

MOST of us can remember back when a farmer, interested in more pasture for his bees, was often threatened with fines and jail sentence for slyly scattering seeds of sweet clover wherever he thought it would catch. Considered then as a noxious weed, sweet clover is recognized today as one of nature's finest gifts.

Sweet clover never received the attention it is being given today. Of the four varieties cultivated in this country, the white biennial (**melilotus alba**) is the most popular. Sweet clover, very sensitive to a lack of lime in the soil, grows in land so strongly alkaline that alfalfa will die out.

Its prevalence along roadsides and on waste land brings to mind that, in this day of soil conservation and erosion, dust storms and floods, game conservation, and ragweed elimination, perhaps sweet clover is not only the cheapest but easiest solution to the whole problem.

There is not a farmer who does not know the value of this clover as a cultivated farm crop, nor who is not conservation conscious. We should all not just talk sweet clover, but get behind the program to seed it on all unused land. It is one of the best soil builders known, supplying a high percentage of nitrogen to the soil. Its long roots prevent soil wash. In game conservation it supplies excellent cover and some food for birds and rabbits. Sweet clover along the roadside can do much in promoting this country's great tourist trade by choking out the dreaded ragweed. Seldom is ragweed found where sweet clover has been allowed to grow.

Then to those who own bees is the additional reward that sweet clover is the finest honey plant known, excelling its nearest competitor, white clover, ten to one in honey production. Naturally the presence of bees in turn is favorable to a large yield of sweet clover seed.

Let's make sweet clover the topic of the year at all bee meetings. Beekeepers saved sweet clover for America, now let sweet clover save America. And please, Mr. American Honey Producers' League, lend us a hand in making sweet clover at home on American wastelands.

Price Competition for Honey

For several years, local grocers have made it a practice to sell cane sugar at little profit, or actually at a loss. If this is a practice throughout the country, it appears to me a serious handicap to the sale of honey at a fair profit.

I can understand why, to stimulate sales or attract customers to his store, a merchant sells certain commodities at figures lower than usual. Such sales are frequently resorted to in order to dispose of a surplus stock, especially of perishable goods, or to obtain additional working capital. But why sugar should be selected as a leader, has never been satisfactorily explained to me. Theoretically, I believe every article sold by merchants should earn its share of the profits.

Cane sugar is a sweet sold in direct competition with honey. Honey must be seriously handicapped when the sugar is sold at too low a figure. Have the honey producers considered this phase of the market situation?

I am aware that there is an opportunity here for bringing about an improvement. With the grocer, sugar is but one commodity among many; with the beekeeper, honey is likely to be his sole stock in trade.

B. D. Miller,
New York.

—ABJ—

Mead

Dissolve an ounce of cream of tartar in five gallons of boiling water; pour the solution off clear upon twenty pounds of fine honey, boil them together, and remove the scum as it arises. Towards the end of the boiling, add an ounce of fine hops; about ten minutes later put the liquor in a tub to cool; when reduced to the temperature of fresh milk (about 80 or 70 degrees F.) according to the season, add a slice of bread toasted, and smeared over with a little yeast. The liquor should now stand in a warm room, and be stirred occasionally. As soon as it begins to carry a head it should be tunned, and the cask filled up from time to time from the reserve, till the fermentation has nearly subsided. It should now be bunged down, leaving a small peg-hole which should be closed also in a few days. In about twelve months the wine will be fit to bottle.

David Scholes,
British Columbia, Canada.

—ABJ—

Why Not?

As sugar cane supplies the base for Coca-Cola and prune juice the base for Dr. Pepper, why not a soda fountain drink using the lower grade honeys? In the hands of an expert, such a drink might be made second to none.

J. E. Finks,
Missouri.

Utilizing the Sweet Clover Plant

By A. G. Woodman,
Michigan.

I read your editorial in March about this. It is interesting. I have thought for some time that honey producers are overlooking a good bet in failing to make the most of spreading propaganda about the use of sweet clover in soil conservation, game conservation, soil erosion, weed elimination, etc.

Most everyone knows the value of sweet clover in rebuilding soil fertility in common with other nitrogenous and leguminous plants. Some appreciation of sweet clover is shown in soil erosion, the long roots tending to check washing of the top soil on hill sides, gullies and ravines, but we have seen little mention of sweet clover as a game cover and source of food. Brushy sweet clover makes a wonderful cover for birds like quail, pheasants, partridge and other small game.

Michigan, and perhaps other states, nearly every season lately has had campaigns to reduce and eliminate the ragweed. Of course, this is because of hay fever. It seems they have overlooked sweet clover growth as the easiest way to combat ragweed. Have you ever noticed that where sweet clover grows abundantly along the highways and in the fields ragweed gets little chance to develop? Sweet clover gets an earlier start in the season and kills it out. Certainly sweet clover is a pleasant plant to have along the highways in comparison with the pungent ragweed.

In Michigan there has been a tendency of the highway departments to cut sweet clover along the roadsides. This is a mistake as it gives ragweed a chance to develop. There are millions of acres of marginal or waste land where such pungent foul pests as wild carrot and other weeds grow where the growth of sweet clover could be attempted.

—*ABJ*—

Honey Fruit Bread

Mix ¼ cup honey, ¾ cup brown sugar, 2 tablespoons shortening, 1 teaspoon salt, ½ cup pitted dates (sliced), ½ cup dried apricots (chopped) and one cup milk. Heat slowly only until the sugar is dissolved and the shortening melted. Let cool to room temperature. Add one tablespoon lemon juice and one beaten egg. Sift 2½ cups of flour, ¼ teaspoon soda and 2 teaspoons baking powder together, and mix in 1/3 cup of bran. Add dry ingredients to the fruit mixture and stir well. Do not beat. Bake in a greased loaf pan, lined with waxed paper, in a moderate oven, 350 degrees F., for one hour. Makes one good sized loaf.—Taken from "The Hoosier Farmer," October, 1936.

1

The Queen's Occupation

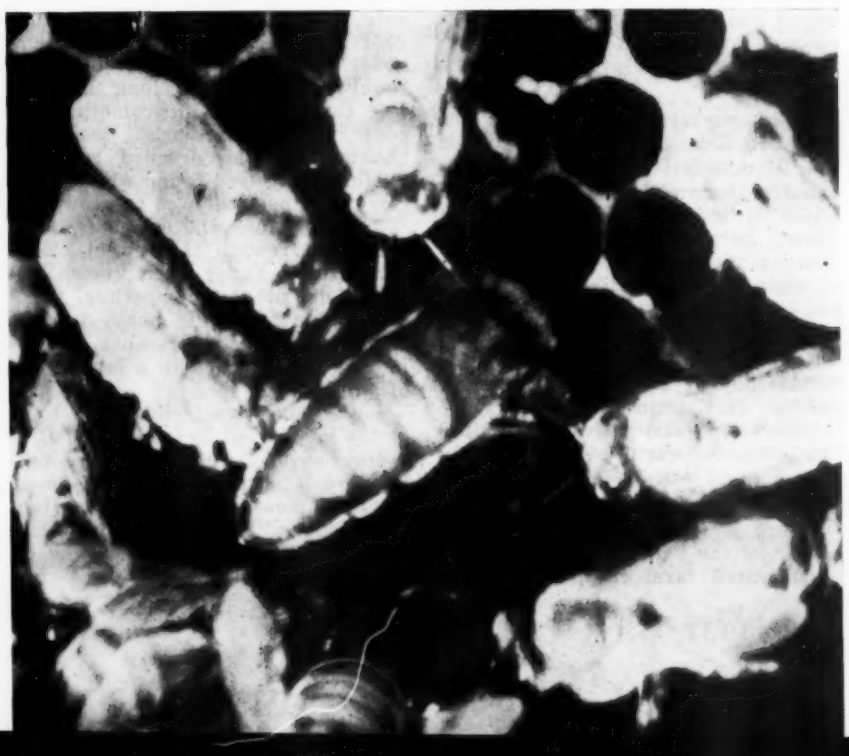
THE three pictures were sent to us by Natt N. Dodge, of the National Park Service, Grand Canyon, Arizona. Readers will remember Natt as the author of so many interesting articles about beekeeping in the West. He was at one time with the Western Slope Association at Seattle. He is now a park ranger and is doing fine work in the Grand Canyon in Arizona. He is the author of a number of important surveys for the National Park Service.

Let's see how the pictures fit the title:

1. All groomed up. The circle of attendants are busy dusting off her majesty while she looks about with curiosity over the surface of the comb. This is a typical picture of a queen and her surrounding attendants.

2. Let's see what's in here? Her ladyship finds a cell which looks promising, so head on, she investigates while her ladies in waiting re-

2



3

spectfully stand by.

3. Well, here goes! Pop! Another egg! She may lay 2,000 of them in 24 hours. Pretty busy for a queen. No strawberries and cream and a soft cushioned chair for her. If she performs such a job day after day, or even a portion of it, for several years, she certainly has been a useful member of the animal kingdom.

—ABJ—

Pep for Deep-Sea Divers

In the April issue of The American Magazine, Captain John D. Craig, a famous deep-sea diver tells "How we'll get the Lusitania's gold." Craig is used to taking chances. He describes the newest improvements in diving equipment and how this coming summer the salvage ship Orphir, a former lighthouse service boat, is preparing to steam out of Glasgow again, carrying enough men and equipment to find the sunken Lusitania whose exact position on the ocean bed has been already ascertained and a thoroughly scientific attempt made to open the sunken vessel to obtain the treasures known to have been aboard at the time of sinking.

"Captain Craig, at 33, has lived through more adventures than most men read about. He has fought man-eating sharks and giant devilfish in ocean depths, and has trudged over miles of sea-bottom. Now he is ready to plunge into his most dangerous adventure—the salvaging of the Lusitania." Thus, does The American Magazine describe this intrepid ocean diver.

We quote again from the last part of the article: "All of us are in the pink of condition. We have trained for months, working off every ounce of fat. Those of us who do the diving, like myself, have given up tobacco, alcohol, and mixed foods. That is most important. Working at great depths in artificial atmosphere, our bodies must be perfect metabolic machines. Oxygen has burned our blood clean, and the slightest impurity or imbalance, traveling through our systems with great rapidity, causes disagreeable reactions.

"For weeks, we shall have nothing for breakfast but a glass of orange juice and a pound and one-half of honey in the comb, which we chew thoroughly, spitting out the wax. The honey provides a carbon background for the oxygen to burn upon, and prevents its burning our tissues. When we come up from the sea, we are given nothing to eat except a half-tumbler of strained honey, lemon juice and rain water. We carry crocks of rain water in the ship's refrigerators because it is not only pure but contains a high degree of oxygen. When we emerge from the water our body temperatures have fallen from 98 degrees, normal, to 85, although we do not feel the cold. The rain-water-honey mixture warms us up, and then, after a massage, we go to bed. After a brief rest we eat, but we must stick to one thing at a meal —proteins or carbohydrates, not both. We immediately feel it if we take the combination, and we suffer nausea or weakness. Our physical discipline is most severe."—(This article was called to our attention by Alfred C. Johnson, Englewood, Colorado.)

International Milling Gives Bakers' Recipe for Honey Bread

American Honey Institute has sent a copy of a whole wheat honey bread formula for bakers from the International Milling Company Bakers Service Department.

Perhaps you can interest your local baker in this bread. It is a whole wheat honey bread with this formula:

Straight Dough Formula.

Robin Hood Whole Wheat Flour (Fine, Medium, or Coarse)	100 lbs.
Water (Variable)	65-75 lbs.
Yeast	2 lbs.
Arkady	4 ozs.
Salt	2 lbs.
Honey	6 lbs.
Shortening	4 lbs.

Set at 76° to 78° F.

Fermentation.

If the conditions of the shop warrant a 2½ hour fermentation period it may be divided as follows:

1st Punch at end of 1 hour 45 minutes.

2nd Punch at end of 30 minutes.

To Bench or Divider 15 minutes.

Whole wheat doughs should be kept cool and on the young side. Use one pound pans for 1½ pound loaves and one and one-half pound pans for 2 pound loaves. Do not give the loaves much proof in the pans, but depend upon getting some volume in the oven. Bake thoroughly with no steam in the oven.

—ABJ—

Where Did It Come From?

For a number of years I have held to the delusion of security from American foulbrood because of my isolation. The Florida Key on which I am located is seven miles from the mainland and I am told the mainland is inspected and free from disease. The Key itself has no wild bees, as the ants would get them in short order.

But imagine my surprise last May to find one colony badly diseased. I thought it surely might be a mistake in diagnosis, so I killed the queen and took a chance. What a mistake that was! Sixty days later there were seven, all neighboring this one.

Well, Key Biscayne must be kept clean so I set a honey tank on a brick arch over a good fire, closed each hive at night and boiled them. So! —But where did it come from?

Geo. Gordon,
Florida.

Carr Turns to Queen Breeding

E. G. Carr, of New Jersey, formerly apiary inspector and for many years, New Jersey's leading official and industrial promoter, now retired to his home at Pennington, has turned to queen breeding. We have from him a little folder on Italian queens. Mr. Carr was bee inspector for more than twenty-three years in New Jersey and his stock is taken from the New Jersey Agricultural Experiment Station, a stock noted for European foulbrood resistance. Mr. Carr also secured the stock of Mr. R. B. Spicer, Wharton, New Jersey, who has been breeding and selecting for twenty-five years.

———ABJ———

Honey White Cake

½ cup butter
1 cup sugar
½ cup light honey
1 cup milk
3 cups cake flour
3 teaspoons baking powder
¼ teaspoon salt
4 egg whites

Sift flour once before measuring; add baking powder and salt and sift 3 times. Beat egg whites stiff on 7 or 8 speed of Mixmaster. Cream butter, sugar and honey on No. 1 speed for 5 minutes in small bowl. Transfer into large bowl and add sifted ingredients alternately with milk, starting with dry ingredients and ending with same. Add egg whites. Bake in two 9" layers in a 350° F. oven for about 30 minutes.

Uncooked 7 Minute Honey Icing.

2 egg whites
½ cup white Karo syrup
½ cup light honey
Pinch of salt

Beat 7 minutes on 6 speed of Mixmaster. Spread on cake and cover with moist cocoanut.—From Illinois' honey cooking expert, Mrs. Adam Bodenschatz.

———ABJ———

Honey Prune Bread

1 cup honey
¼ cup butter
¼ cup brown sugar
2 eggs, beaten well
2½ cups milk
1 cup mashed prunes, stewed and drained
3 teaspoons salt
2 cups cornmeal
1½ cups whole wheat flour
2½ cups white flour
6 teaspoons baking powder
1 teaspoon soda
2 cups nut meats

Cream honey, butter and brown sugar together. Add beaten eggs. Combine all dry ingredients and add alternately to the first mixture with mashed prunes and milk. When thoroughly mixed divide batter and bake in two loaf pans for one hour and fifteen minutes in a moderate oven.

Mrs. Benj. Nielsen,
Nebraska.

As the Water Rises

HOMER W. RICHARD of Arkansas sends these two pictures of one of his outapiaries at Calion, Arkansas on the Ouachita River. Water seems to be popular these days. Recently, in one of our own apiaries, an unexpected 4-inch rain sent water from neighboring hillsides scudding through a yard located on flat ground at the top of a deep ravine. Any ordinary observer would say it was impossible for water to damage this yard; yet, it did. It drowned six colonies and filled the others with mud and debris, and it has only just been cleaned away.

Fire and water are two of the worst natural menaces of outyard beekeeping. Many pictures like these sent by Mr. Richard probably could have been gathered along the waters of the great central rivers this past year.

———ABJ———

Aunt Jemima Goes Honey Way

A half page ad in the Woman's Home Companion for May, page 133, gives Aunt Jemima's magic menu for Spiced Waffles and Honey. The recipe for Aunt Jemima's spiced waffles are in the Aunt Jemima package, but it is advised that they be served with crisp bacon, warm honey, butter and coffee. One! Two! Three! For Perfect Waffles!

Thanks, Auntie! We'll try to have Aunt Jemima for breakfast more often. [Just a secret between us, Auntie, we have Aunt Jemima Buckwheat cakes for breakfast at our house 365 days in the year, and we wish there were a few more days added; always with honey, too, and bacon, one egg, hot coffee. Oh boy! Ed.]

Chemist's View of Honey, Diabetes*

By Eastman Lynn,
Illinois.

THE pancreas normally thought of as an organ of digestion has in addition to its enzyme producing cells a group of cells called the Islands of Langerhans. This group secretes the hormone, insulin, which is absorbed directly by the blood stream. Insulin in its action determines the fate of glucose in the body and malfunction of the Islands of Langerhans causes a fall of insulin in the blood and a subsequent rise in sugar concentration. The condition just described is called **Diabetes mellitus.** Normally the concentration of sugar in the blood is 0.09% - 0.11%, and if the glucose cannot be oxidized the sugar mounts to a concentration of about 0.18% - 0.20%. Thus there is a "flood" condition and the "flood waters" as it were, are spilled over the renal dam of the kidneys and is excreted in the urine. The sugar that appears in the urine of diabetics is always glucose.

Acidosis, the cause of death and much discomfort in diabetes is the result of the presence of unoxidized fatty acids and their ketones, such as beta-hydroxy butyric acid, aceto-acetic acid, and acetone. These are commonly listed as the "acetone bodies." It has been said that the "fats burn in the flame of the carbohydrates." Macleod stated, "If the carbohydrate fires do not burn briskly enough, the fat is incompletely consumed; it smokes as it were, and the smoke is represented by the ketones and derived acids." Thus in diabetes there occurs a marked condition of acidosis which is indirectly due to faulty sugar metabolism. In the advanced stages it results in a destruction of the alkaline reserves and increases the hydrogenion concentration. Since the body cannot be anything but alkaline in reaction the approach to neutrality is accompanied by coma and finally death.

The majority of diabetic cases are not totally diabetic; that is, most diabetics have some carbohydrate tolerance. By careful procedures the amount of sugar that can be burned is determined and the maximum of sugar fed to prevent the production of the "acetone bodies." Thus acidosis can be alleviated. This procedure is to be preferred to the use of insulin injections since the latter causes the formation of painful subcutaneous connective or "scar" tissue. Some in their diabetic therapy have used fructose instead of glucose. Probably a slightly increased tolerance of fructose by the diabetic is due to the inability of the body to utilize fructose as such, the fructose being changed in the portal system and the liver to glucose. Since this change is gradual it allows the slow infiltration of glucose into the blood stream, which can be utilized. From this point of view, on account of the dominance of fructose in honey, one might contend that there is some small benefit to be derived from the use of honey as a sweetening agent in diabetic dietetics. It must be remembered that honey contains almost an equal amount of glucose. This is immediately available to oxidation and can cause the over-concentration of sugar in the blood. Hence any marked benefit in its use for diabetics is questionable and recommendation of the honey therapy should be left to the physician.

*Because the information in this article is a definite clear-cut statement on a confusing question to beekeepers, it was prepared at the request of the undersigned. Acknowledgment is made of helpful suggestions by Dr. Duane T. Englis, of the Carbohydrate Division, Department of Chemistry, University of Illinois.—V. G. Milum.

ABJ

How About It?

Can Cordage Be Made from Sweet Clover?

In regard to your editorial on page 126 of the March issue about the utilization of sweet clover, years ago I noticed how the tops or branches of the plant, as it stood dry and stalky beside the roads in winter, would break off and dangle around in the wind, held to the plant by the strength and flexibility of its fiber. As a boy in the early '90's in this country, I had learned from a Galician lad to spin entirely by hand loose fibers pulled from waste binder twine, hunted out of a straw pile, into a strong, fine twine, about twice as thick as a common store twine, that one's hands could not break. I tried this on sweet clover fiber and found it quite easy to produce a two-strand cord about half the thickness of a match that could not be broken with the hands. When this could be done with dry fiber from a dead, dry stalk, I wonder what results might be obtained were the plant subjected to the ordinary processes of retting as applied to flax and hemp?

I tried to interest Canadian cordage makers in it, but without success. I believe the sweet clover fiber could be used to make strong and perhaps coarse textiles for sacks as well as for rope. John Hubbard,
Saskatchewan.

ABJ

Poultry Wax

In a letter from Prof. A. E. Tepper, of the University of New Hampshire, concerning the use of wax in plucking poultry, he reports that beeswax is not used to any great extent because of the low price of other waxes, commercial plucking wax being available at 5 cents per pound in quantity lots. He says "beeswax has no special properties to make it superior to any other grade of wax."

Mr. Tepper reports the use of this method is covered by patent and a license to dress by the method must be secured from the patent owner which amounts to about 17½ cents per 100 head of dressed poultry. The owner of the patent is C. V. Roserberger, Independence, Iowa.

ABJ

Bread Pan for Wax Mold

My favorite wax mold for beeswax is the little bread pan sold in the ten cent store. It flares at the top enough so that the wax comes out easily when cold. These pans may be stacked together nicely when they are not in use and they may be obtained in almost any size. The corners must be soldered as they are only folded and will not hold hot wax otherwise. It is a very easy job, however. C. W. Fitzsimmons,
Iowa.

WOI Is Instituted to Give Honey Notes

Contacts similar to that at Iowa where the bee department is in continuous contact with the radio station at the College, is a sample of what might be done in many other places.

Mrs. Ness in Homemakers' Half-Hour over WOI each day broadcasts various subjects in which are included recipes of all kinds.

She has been very fine about recipes for using honey and as a consequence has gotten a large number of inquiries from her listeners for such material. Included in the service of the station is a group of mimeographed bulletins which are sent out to listeners. Among these, of course, are included many recipes for honey. Both the bee department, WOI and Mrs. Ness are to be commended for their magnificent work at the WOI station.

—ABJ—

Honey, An Old Sweet for Modern Merchandising

This is the title of an article on page 20 of "The Co-Operative Merchandiser" for April, 1937, the official publication of the National Retailer-Owned Grocers, Inc., with a circulation of 21,113.

Probably, it is a staff written article as no author's name is signed to it. It describes the history of honey, mentions Honey Week specifically with an appeal to grocers to capitalize on this new spring festival, which emphasizes honey all over the country. It gives ways in which grocers can build displays and conduct demonstrations. It gives information for the grocer to use to answer his customer's questions about honey, how to use honey, the different kinds of honey, how to keep honey and then ends with typical honey recipes.

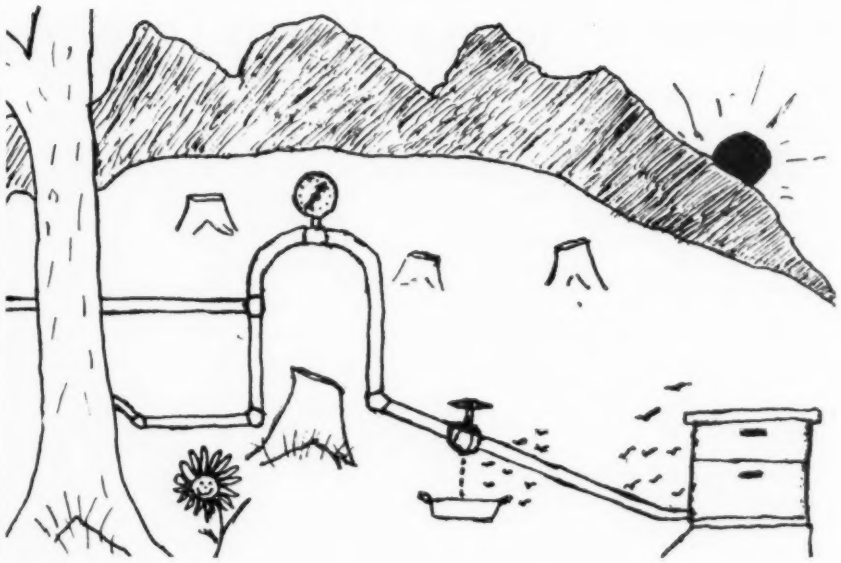
At the bottom of one page is a suggested display of honey together with cereal, flour, bread and meat, ways in which honey may be used by the housewife. Altogether, it is a fine article and a most useful one to the retailer.

—ABJ—

An April Fool's Trick

April fool morning my neighbor called me on the phone and said, "I saw somebody around your bees last night and I think they took some supplies off the hives." I thanked him and hurried out to the hives. When I got out there, he holloed "April Fool." While trying to cover up my mistake by looking around as if the bees did need examining, my eye caught sight of a swarm on a nearby post. I guess the trick didn't have such a bad hypothesis after all.

Paul E. Farrell,
California.



The Adventures of Flighty

HOWDY, Beemen:

Don't look now, but here is our contribution to the industry, a new cheap method of spring feeding. We have worked diligently on this contrivance for twelve months, burned a lot of midnight oil, killed many bees, and ruined a number of trees, but success is ours! Washington hasn't granted us a patent yet, but I'll take a chance and illustrate this new contraption for you. By piping maple sap from nearby trees direct (?) to the hives, we have not only found a cheap means of feeding, but got out of a lot of work. This system not only takes care of the bees but gives us a large quantity of surplus honey with a maple flavor. Perhaps we will have to sell it as maple syrup, but after all, it is honey, isn't it?

—o—

Professor Delph, of the University of Michigan, has succeeded in producing a fine grade of syrup with a maple flavor from dahlia bulbs. Looks like competition, but the Professor says his scheme would be an unprofitable commercial venture.

And the Professor reminds me of a recent college incident. A class of students was given a long list of words to define among which was the word "apiary." Because only one out of ten knew the meaning, they are talking of dropping the word. My word! They should ask some of us dumb beekeepers those questions, and then give us a degree.

—o—

Professor R. H. Kelty (heck, I mean Russ), confirms my statement as credited to him, of setting retail price scale, but advises the basic price in Michigan for 1936 was seven cents, not six and a half cents. O.K., Kelty.

You don't have to let your mind wander much when reading the Federal honey market reports to get rheumatic—I mean romantic. Picture the early activity in the South, the ice sheets in the Central states, and the snow in the North. Smell the smudge pots in the California orange groves, see hives, tar paper-wrapped, and unwrapped, and those in deep, dark cellars. See the trucks of Wisconsin, Michigan, and Iowa honey being unloaded in Chicago. See the queer boxes of honey from Cuba, Roumania, and Egypt, being piled on the docks at New York, along with bags of beeswax from Ethiopia, Egypt, South Africa, Brazil, and Chile. See bakers pouring honey into bread formulas, grocers selling it over the counter, people pouring it liberally over wheat cakes, pancakes, griddle cakes, flannel cakes, flapjacks, and biscuits.

—o—

Quite interested in the article by H. W. Stewart, Kansas, in the March issue, in which he figures colony cost at $16.26. No doubt several will take issue with him on this point. I have figured for several years and my cost figure settles at $16.35. Stewart is right in his system, too many don't take into account such things as rent, truck expense, and own labor. But surely a commercial beekeeper's hourly rate should be more than twenty-five cents.

I got a set-back from Stewart's statement that there were only 159 members of our great American Honey Institute. Hull-y Gee! How come? After you deduct all the officers, committeemen, lifetime members, and me, there aren't many left.

—o—

We ought to be just as proud of the exposition in the March issue that

dead bees were finding their way into baker's bread. Poor publicity, but such things must be exposed to be corrected. I don't like this tish-tish stuff about American foulbrood. Many say, oh my, don't talk about it, it will hurt the trade. Let's keep it under our hats. Wish they could keep it there, all of it. Having American foulbrood is no disgrace, it is tolerating it that is. If people know your yards are state inspected, they will know it is clean. People didn't quit eating beef or drinking milk, because of the hoof and mouth disease, or tuberculosis. They knew something was being done about it.

— o —

Little Miss Flighty is almost a year and a half old. How children grow! Solid foods now, with lots of honey. Like the American Honey Institute, she is growing fast and needs more substantial nourishment.

— o —

Received a letter the other day from a New Yorker who wished to correspond with me. Being a total stranger, I couldn't quite fathom it, and wrote to the effect that it puzzled me, a blase sophisticated New Yorker from the city of brownstone mansions wanting to hear from a humble Michigan beekeeper. If you yearn for the city, read parts of his letter.

"Swank brownstone houses! Ye Gods! One trip through the mean streets that lead to the Navy Yard and you would beg every bee you possess to sting you into the realization that you are very content to be where you are. A rush hour trip on the devil's own railroad, the Subway, and you would be praising the Almighty for the howling blizzards of Charlevoix. * * * * * * * * *

"Blase New Yorker am I? The Great American Desert is a howling metropolis compared with the desert that is New York. There is neither time for politeness, nor opportunity to make friends when once you are caught up in the vicious stream of competition: not competition of interests but the survival of the fittest in eking out a fair living. * * * *

"By all means tell me about the bees. My boyhood was spent in the small country town of Hereford, England, noted the world over for its pedigreed stock. One of Dad's friends was an authority, in fact the county consultant on the troubles of beekeepers. I used to walk the mile from town to buy our honey, generally the crystallized, sugary kind. They had acres of flowers in back of the buildings though I cannot remember what. So at least I have known another beekeeper."

Well, I've written and told him about the bees, and I'll bet one of our spring feeders I get a honey sale.

— o —

Just been in touch with Elmer Carroll. Being arthritic too, he and I ought to make a great pair of pretzels. He says if I don't mention sweet clover in this letter, that my burro-riding friend, Woodman, will never forgive me, so here goes—

Clover sweet
Is hard to beat.

Flighty.

—ABJ—

The Moral Is—More Ear Plugs

The following is clipped from "Farm and Home" and sent by Alfred H. Pering, Florida: "We agree. The roar of Chicago and Manhattan is hardly more racking than the higher intrusive noises that villages permit. A lady we know, who lives near an elevated road, radio fiends, and so on, in a great city, plugged her ears at night with little dabs of beeswax solemnly sold at metropolitan drug stores, a dollar for six, so that one may enjoy civilization at its gaudiest and still not go wholly insane).

But a family of drunks, male and female, moved into the next apartment, and their revels tore right through walls, beeswax and all. So the lady fled to a village on the eastern shore of Maryland for tranquillity, which she did not get. The town power-plant had a crack like a seventy-five at topmost salvo: speed boats kept up, day and night, a machine-gun accompaniment; and radios were as noisy as at home. The poor lady went to a near-by beekeeper and bought earful upon earful of beeswax. Her only gain from the excursion was that, in the country, beeswax was cheap."

Let's try it ourselves. Any noise opposite to that we are accustomed to hear at night is apt to keep many people awake. Sorry, beeswax ear plugs. (Six for a dollar! Oh gosh!)

—ABJ—

Patent on Process for the Purification of Honey

February 9, 1937, patent No. 2,070, 171 was issued to Rex E. Lothrop and Howard S. Paine on a process for the purification of extracted honey, and the patent is dedicated to the free use of the public. So, the important work of the Bureau of Chemistry at Washington has been preserved for the industry through the far-sightedness and generosity of these two fine cooperators. Copies of the patent and description of the method may be obtained by sending 10 cents to the United States Patent Office, Washington, D. C.

Lives of Famous Beekeepers—A. I. Root

(Continued from page 332)

adapted from Moses Quinby, with certain improvements.

For a number of years Root had been experimenting with bee smokers and with smoking materials. He had started with rags, then used rotten wood until he burned up a hive of Italian bees. He tried the tin pan recommended by Elisha Gallup, but it burned his hands. Then he used an enamel saucepan with a handle. He had used and had given some publicity to what he called his corn popper smoker, which was merely a corn popper filled with rotten wood. He expressed himself after due trial as being willing to be stung rather than to be smoked by such an implement. At last he adopted Moses Quinby's smoker, added certain improvements so that the draft and volume of smoke could be better regulated, and placed it on the market.

Root was the first to sell dollar hives, and he encouraged other manufacturers to follow suit. Cheap hives led many people to take up beekeeping. Some observers, however, doubt that they were a boon in the long run as they blame the small cheap hives in part for the trouble beekeepers had with short crops for many years. Root called the attention of beekeepers to the grafting method of rearing queens, and the fact that John L. Davis of Delhi, Michigan, had succeeded with such a method. It was later adopted and successfully perfected by G. M. Doolittle. Root was first to try shipping bees by the pound, in 1879. His efforts forecast the large industry in package bees that has developed since. He sold his bees for one dollar a pound in combless packages, and said that in 1880 the demand for package bees with queens was so great that his apiary was depopulated just about as fast as he could replenish it. The next year he raised his price to two dollars a pound.

Probably the most notable contribution of A. I. Root in those years was his successful manufacture of comb foundation with roller mills which were made in his plant. In 1876 after much experimentation he was able to record in Gleanings "we are happy to state that the metal rollers (for making foundation) are a complete success." Thus comb foundation became a commercial product, and Root was one of its first manufacturers. Later in company with the Dadants he befriended E. B. Weed and furnished him with the means for completing his invention of a mill for making endless rolls of comb foundation, the standard method in use for making the product today.

(To be concluded next month.)

Death of Perret-Maisonneuve

WE regret to announce to American beekeepers the death of A. Perret-Maisonneuve, eminent French apiarist and author, on April 19, of pneumonia. Mme. Perret-Maisonneuve writes that at the time of his death M. Perret-Maisonneuve was engaged in researches concerning the diseases of bees. What might he not have accomplished had he lived to complete his work!

To beekeeping Perret-Maisonneuve leaves a monumental work, "L'Apiculture Intensive et l'Elevage des Reines," which ranks in stature with such works in English as the Langstroth "Honeybee" and the Root "ABC and XYZ." Perret-Maisonneuve was recognized and honored by scientific bodies in France and his work there took him into other fields than that of beekeeping. At the end of the world war, in which he enlisted as an ordinary soldier, he emerged an officer, Chevalier de la Legion l'Honneur, and received the Croix de Guerre, avec Palme.

Increase

By C. E. Watts,

Oregon.

I have been looking over some of the back numbers of A-B-J. In the August issue, 1936, page 408, the question was asked: "What is the cheapest way to make a big increase without damage to the honey crop?" The person asking said he had seven colonies and wanted to increase to twenty. Your answer is: "It would be difficult to make that increase without damaging the crop" and, of course, you are right as to that. And then you say a good way is to draw off one or two combs from each colony placing two or three in new hives and placing them on a new stand, giving the divisions new queens. That would not be quite as cheap as to let the divisions raise their own queens. But supplying queens, of course, will help them to build up quicker and when one can get queens after May for 50 cents, I think that the better way. Besides, if one is where queens are very apt to mismate, it would be best to buy pure young queens. Then you say the divisions should be located at least two miles away. I can't see the reason for that. I have made artificial swarms and set them any place I wanted.

If I were to want much increase, I think I would wait until a colony was about ready to swarm, or perhaps I would let them swarm, and then divide the combs in the parent hive, putting half of them in a new hive. A young queen would soon be out in the old hive and the new hive would have half the brood with a young queen. It would soon build up into a fine colony. That would be increasing each one to three, making twenty-one colonies.

A good many years ago, in my native state, New Hampshire, I had some of the albino bees and they were beautiful and easy to handle. I think I had four hives one spring and one of them in particular had a fine young queen. Once I saw they were forging ahead and I thought I would see what they could do, as the spring was favorable. I let them swarm, as I wanted increase. They swarmed three times and when they swarmed the third time, I opened the hive and saved two of the young emerging queens and made two artificial swarms. In that way I increased one to six, and from the first swarm and some of the others I took over 100 pounds of surplus honey. I thought that was something very good. The whole season was favorable. If I remember right, I helped them with some foundation and they all had ample stores for winter. I have often wondered if I had let them swarm only once and run them for extracted, how much could I have taken. I was only a youngster then, but when I took out some frames and saw those fine large young queens come out of the cells, I said I'll try and have some of them. I wish I had some of that kind of bees now. I have never seen anything I liked as well.

—ABJ—

10-Frame Supers on Modified Hives

HERE is a picture that shows how I use shallow 10-frame supers on Dadant hives. The bees brought honey in so fast it was impossible to keep up with them. This hive was half strength the previous fall. They wintered with an extracting super about one third full of honey. I extracted over 30 gallons of heavy clover honey from this colony and left over half a super for winter besides a lot in the hive body, which, in the spring, had been half drawn.

Two winters ago I wrapped the hive with ten thicknesses of newspaper and covered it with building paper. You remember the winter, how severe it was. They came through in excellent condition. I did the same last winter and they are in good shape.

W. M. Cohenour,
Illinois.

Nectar-Concentration Studies

By Geo. H. Vansell,
Bureau of Entomology, U. S. Department of Agriculture.

RECENT studies have shown that some fruit blossoms are neglected by bees because others nearby have a higher percentage of sugar in their nectars. The real reason for a fruit-pollination problem, under certain conditions, is thus clearly explained. That a significant variation in richness of nectar also exists among major honey plants is becoming established. On June 12, 1935, opportunity arose for recording the concentrations of certain honey-plant nectars in Trabuca Canyon of Orange County, California.

Observation showed that wild alfalfa (first) and white sage (second) were providing much nectar for the bees, while black-sage nectar was scarce although blossoms were abundant. This situation is perhaps somewhat unusual, since neither wild alfalfa nor white sage was supposed to be of special value in the immediate area. (See Table I below for data.)

The honey, stored at the time these nectar readings were secured, was colorless and very mild in flavor. Granulation occurred within six months, a fact which indicates that a high percentage was from a source other than sage.

Orange blossoms were not available on June 12 for inclusion with the readings given in the table. Data from Davis for May 18, however, are at hand to demonstrate that the average concentration from many samples of bee-collected navel orange nectar was 39.8 per cent sugar. The humidity at Davis was probably lower than at Trabuca; and since lowering humidity causes a rise in nectar concentration, the orange values may be relatively high.

TABLE I.—The Concentration of Sugar in Certain Nectars.

Name of plant source	Av. sugar val. by refractometer in: Bee-nectar	Hand-nectar	Samples tested	Time of day	Remarks
	Percent	Percent	No.	a.m.	
Black sage	44.9		8	11:00	Little nectar in blossoms. No pollen gathering activity noted.
Wild alfalfa	52.0		7	11:45 a.m.	Nectar abundant and quite attractive to bees. A limited quantity of brownish yellow pollen also provided.
Monkey plant		32.0	4	12:30	Bees interested only in the sticky brownish pollen.
Wild buckwheat	58.1		2	1:00	Nectar very scarce; bees securing greasy yellowish pollen.
White sage	48.0		9	3:00	Nectar abundant and quite attractive to bees. No pollen-gathering activity noted.
Tree tobacco		25.9	11	4:00	Nectar very abundant, but bees not interested in this plant.

—ABJ—

Tops

KENNETH TWEEDY, of Idaho, sends this picture of himself beside a swarm which has comfortably settled down, head high, easy to get. It illustrates two of Nature's most highly evolved forms, man and bee. For countless years the bee has performed this ceremonial rite of increasing which we call swarming, and we have tried to understand the complicated system of living known as the bee colony. Little change has been evidenced in the habits and life of the bee as far back as history runs. Where they came from, what their destiny is to be, we only know a little. About their important relation to our own life, however, we know much.

Thanks, Mr. Tweedy, for the picture and for this opportunity to philosophize about it.

A Critical Study of Abushady

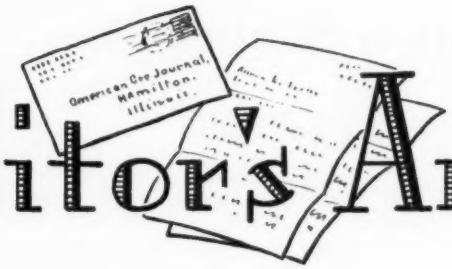
AN appreciation, "Abushady the Poet," by I. A. Edham, vice-president of the Soviet Institute for Islamic Studies, etc., has recently appeared under the imprint of Gustav Fischer, Leipzig. Dr. A. Z. Abushady is known to beekeeping as founder of the Apis Club and former editor of its publication, "The Bee World," and to Islamic literature as its greatest modern poet. In his essay Dr. Edham sketches briefly the Islamic literary background, Dr. Abushady's achievements in other fields, his status, his poetry. Included are representative selections from the poet's work. These, in Arabic, will be unreadable to many persons, including this reviewer. The most one can do in regard to the poetry itself is to note, through the illuminating comment of Dr. Edham, the astonishing versatility of the poet in style and mood.

—ABJ—

Honey-Cream and Frozen Desserts

Considerable comment has been received about the article by Prof. Tracy, of Illinois, in the last issue "Butterfat in 'Honey Bars.'" This was reprinted from "The Milk Dealer" of April 1, 1934. Prof. Tracy has two other bulletins which should be called to your attention: Bulletin No. 387 of the University of Illinois Experiment Station, "How to Make Honey-Cream, a Mixture of High-Test Sweet Cream and Extracted Honey"; and Circular 462, "Frozen Desserts"; delightfully interesting. Those who wish copies, write to the University of Illinois Agricultural Experiment Station, Urbana, Illinois.

The Editor's Answers



Hiving Swarms Temporarily

I have five Modified Dadant hives and each one swarmed. Each swarm was hived in a wooden box as I had no extra hives. Can I unite these bees back to the parent colonies by removing the queens? I cannot afford more equipment. ILLINOIS.

Answer.—Wait until you have supers on the parent colonies, then unite the boxes in some manner above the supers, either over an excluder or above an inner cover with the escape holes open so the bees can work down as they emerge. The queens in the boxes will continue to lay. Later, they may be found and killed or handled in some other manner.

—ABJ—

Disease in Swarms

Is there any danger of new swarms from diseased colonies carrying disease? ILLINOIS.

Answer.—Swarms from diseased colonies when hived on combs may show eventually disease. You will have to watch the brood carefully for some time. It is better to hive these swarms on foundation.

—ABJ—

Driving Bees With Acid

Can I use carbolic acid in driving bees from a diseased hive to a clean one? ILLINOIS.

Answer.—Carbolic acid will drive the bees from a diseased hive to a clean one. Put your carbolic acid frame on top of the diseased hive, which, in turn, is set on the hive of foundation below. When the bees are practically all out of the diseased hive, remove it to be burned, rendered and cleaned as you wish. See that the bees in the new hive on foundation do not starve for lack of food. If this is done in a honeyflow, it is best.

—ABJ—

Cleaning the Extractor

How may the extractor in which combs from diseased colonies are extracted be rendered safe to use? ILLINOIS.

Answer.—Wash the extractor with Zonite or any chlorine disinfectant, or with good hot soap and water, doing a thorough job.

—ABJ—

Moving Diseased Colonies

When should diseased colonies be moved from the apiary? Must it be done at night when all bees are in? VIRGINIA.

Answer.—It is not necessary to move the bees at night. Put a dummy hive with two or three old dry combs in the place of the one to be moved, to catch any bees which may drift in from the field. Move the diseased colony to the hospital yard at once in the daytime when you leave the yard. Later, when you return, you will find that the bees in the dummy have drifted gradually to other hives. They remain in the dummy long enough to get rid of any diseased honey that may be with them. If there is a small number of bees left on the next visit, they may be shaken out in front of the neighbor colony, or gassed, as you wish.

We have never found disease appearing in neighboring colonies as a result of this practice.

—ABJ—

Pollination of Coffee

How many bees would be necessary for the proper pollination of 250 acres of coffee? PERU.

Answer by Penn G. Snyder, Ohio. (Mr. Snyder spent years with bees in the tropics where coffee blooms.)

To care for the pollination of coffee trees on 250 acres would require some bees. Coffee blooms for three days, then possibly another flush of bloom within a couple of months if the first one did not set well. The amount of nectar gathered from coffee is small for the short blooming time will not allow much to be had The trees are shaded with various others like Guma, Guava and Mocha, and the honey comes from them. The amount of nectar available from these shading trees determines the number of colonies that may be kept per acre, and not the coffee trees. I would say a hundred colonies at each end of the finca or two hundred in all would be proper to try. If they yield well, increase to the limit of profit.

Just for the pollination of coffee, one could hardly have too many bees, as there are thousands of blooms to a tree or shrub, and as a rule they yield plentifully. However, when the coffee bloom is over, the extra colonies will starve. In Porto Rico, I did not receive more than an average of 60 to 75 pounds in one location from an apiary of 200 colonies. In a hilly country where coffee is usually grown, the bees do not fly so far. If the winds are heavy, as they are in Porto Rico, this also cuts down the distance of flight.

—ABJ—

How to Remove Bees from Trees

What is the best way to remove bees from a bee tree? What is best time of day and what season is best to get the bees? NORTH CAROLINA.

Answer.—The bees may best be removed from trees in the spring. If you wish to save the bees, fit a wire cone with a pencil hole in the end over the flight hole in the tree so Hang or locate a hive beside the flight hole the bees can fly out but can't get back in. on a platform so the bees can go into the hive with a nucleus and a queen there to hold them. After about two months, the hive may be removed and another put in its place. Usually, you may trap out two or three lots of bees during the season. Then the hole should be smoked with sulphur and closed up to kill the remaining bees if it is desirable.

If you wish to remove the bees from the tree entirely, chop out the nest containing the bees, transfer the comb to a hive and you are done. Saw off that portion of the tree containing the bees and the comb, and break into it in order to get at the comb.

When to Divide

When is the best time to divide a colony and how many may usually be formed? NORTH CAROLINA.

Answer.—Probably the best time to divide a colony is six to eight weeks before the honeyflow. Then you may manage to have as many divides as the bees will furnish. Take a colony with bees and brood, free from disease, and reduce it any time up to the eighth week before the honeyflow to four combs of brood. Thus, if a colony has six combs, take away two; if it has five, take away one; and if it has four, do not take any.

Put these combs of brood and bees without any queen into hives fixed to receive them until each hive has four combs of brood and bees from any of the other colonies from which divisions are being made. The bees may be mixed together. They will not fight.

Give a new queen to each of these divisons and put each of the divisions at least two miles away from their previous location so that the old bees will not find their way back into the hive from which they were taken. If you must keep them in the yard where they are made, make six comb divides with extra bees because the bees will go back to the old stand, and thus, lower the population of the divides materially This way, you can regulate the number of divides you wish to make. After the queens are accepted, the divides are quickly on their way to becoming full colonies, and often make honey the same season.

—ABJ—

Control of Swarming

I have tried all ways that I have read about to control natural swarming—destroying queen cells, giving room and ventilation, moving strong colonies to new positions. Too often, the queens disappear Why is it? BRITISH COLUMBIA.

Answer.—You have done most of the things usually suggested to control swarming. In the majority of cases, the control is effective, but you must remember that a colony that has well grown queen cells in preparation for swarming is hard to introduce queens to. They simply won't take them. In your long letter, you say that you cut out ripe queen cells and introduced new queens, and it doesn't help. That is true. It is hard to find all the queen cells and the queens are usually killed.

One suggestion is this—when you find a colony ready to swarm, with sealed queen cells, take out all but one or two good cells, move the colony to a new place in the yard and put a weaker colony, which may need help with bees, on the old location. The field bees from the colony that was preparing to swarm will now go to the weaker colony, thus depleting the population so that there is little chance that you will get a swarm from the original colony, and the weaker colony is so built up that it will give a good account of itself in the flow.

Wisconsin State Meetings.

The Wisconsin Beekeepers' Association will hold two summer meetings, one in eastern and one in western Wisconsin, in July. Speakers for the meetings will be M. J. Deyell, editor of Gleanings in Bee Culture; H. C. Dadant, of the American Bee Journal; H. F. Wilson, of the College of Agriculture; E. L. Chambers and C. D. Adams, of the State Entomology Department; H. J. Rahmlow, secretary of the state association. Separate meetings will be held for the Ladies' Auxiliary at which Mrs. Malitta F. Jensen or Miss Mercedes Cranston will be the speaker.

On Friday, July 23, at 10 A. M., the eastern Wisconsin beekeepers will assemble at the apiary of Wm. Prochnow, Gillett, Wisconsin. At noon the beekeepers will drive to Shawano Lake Park for a picnic luncheon. Each family is to bring sandwiches and one special dish for the picnic. Following the picnic, the program will be held. In case of rain, the meetings will be held in Legion Hall in the city of Shawano.

The western Wisconsin beekeepers will meet at the apiary of H. O. Rodeske, Fountain City, at 10 A. M., Sunday, July 25. At noon there will be a picnic luncheon at Merrick Park, two miles west of Fountain City, on highway No. 35. Following the picnic, the same program will be given as at Shawano Lake.

Mr. Rodeske, president of the Buffalo County Beekeepers Association, has arranged with the park board to put up a large army tent for the use of the meeting in case of rain.

In addition to important topics presented by the speakers, a list of questions which are being sent in by the beekeepers will be answered. The answers to these questions will make the program of practical value.

H. J. Rahmlow, Secretary.

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North Dakota Summer Meeting.

The North Dakota Beekeepers Association will hold its summer meeting July 28, at Grafton, Walsh County, in the Memorial Park. The Grafton Civic Club and local beekeepers have charge of arrangement and will provide free coffee, cream, and sugar.

Because Grafton is centrally located to a large number of beekeepers the meeting should be well attended.

Among the speakers who have already been secured are M. J. Deyell, of Gleanings in Bee Culture; H. C. Dadant, of American Bee Journal; L. T. Floyd, provincial apiarist of Manitoba.

J. A. Munro,
Secretary-Treasurer.

— o —

Michigan Summer Meetings.

The dates for the summer meetings of the Michigan Beekeepers' Association are as follows: southeastern Michigan-northern Ohio, July 29, at Ross Wyant's apiary, Sylvania, Ohio; central Michigan, July 30, at Oscar Schmidt's, Bay City, Michigan; northern Michigan, July 31, at Jim Hilbert's, Traverse City.

A representative of American Honey Institute and other nationally known speakers are on the program. Further details by mail. Everybody is welcome.

R. H. Kelty.

— o —

New Jersey Beekeepers Field Meeting.

A field meeting of New Jersey beekeepers will be held at the apiary of Joseph P. Stefkovich, and at two neighboring apiaries at Franklin, Sussex County, on Saturday, July 17, starting at 9:30 A. M., DST.

Besides the discussions and demonstrations on beekeeping there will be a short talk by an official of the New Jersey Zinc Company. The zinc mine at Franklin is the richest one in the world.

There are restaurants in Franklin but, following our custom, each will bring his lunch and enjoy a social lunch hour.

Elmer G. Carr,
Secretary-Treasurer.

— o —

Kansas Beekeepers Meet July 18.

The Southeastern Kansas Beekeepers Association will hold its annual picnic July 18, three miles north of Chanute, on highway No. 169, at the E. L. Yount farm. There will be a basket dinner at noon and plenty of iced tea. The business meeting will begin at 10:30 and there will be a program from 1:30 to 3:30. Everyone is invited. Come and get acquainted.

Wm. Krueger.

— o —

Indiana State Round-Up.

Don't forget the Round-Up at Newport, Indiana, August 27-28. Those who have been attending this regularly the past several years admit that it is one of the greatest meetings of beekeepers in the country. Attendance has guaranteed this statement to be a true one, because it has exceeded all expectations. It would not be surprising if in a season like the present one, the actual attendance at the Newport Round-Up would be close to 1,000 beekeepers. There were well over 500 last year. In fact one fat beekeeping editor lost a bet to major domo Stewart (host) when he judged the attendance would not reach over 500. In due time, President Stewart got a new felt hat. (I hope he wears it just to prove that he did get it.)

Those attending the last meeting will remember that Inspector Starkey found his big brother running around in the form of a Wabash catfish almost as big as he is in a special tank on the grounds of the Stewart home. Perhaps there will be another load of watermelons, another carload of fried fish, basket lunches (everybody please get ready oodles of good things way ahead of time).

The meeting will be again at Lee Roy Stewart's Newport home and apiary, August 27-28. More detail of the program and events will apear in our next issue. From the little information we have received, it is understood that there will be a number of the big boys there to talk a little while, not too long, and plenty of three-ring circus events going on all the time to keep everybody occupied and interested. It reminded us last year of Barnum & Bailey and Ringland Bros. combined shows, because it was impossible for any one person to see everything going on at any one moment. It was a grand day and with the experience that has been accumulated in the past, it is certain to be another one better than ever this year. Remember the dates, August 27th and 28th. Beekeepers from Illinois and surrounding states, of course, save these dates.

— o —

Another Beekeeper's Wife Passes Away.

We have just learned of the death of Mrs. Tofield Lehman who probably was as much of a beekeeper as Mr. Lehman himself. The death occurred on May 25 in Fayette County, Iowa. Such endearing friendships as are made by beekeepers' wives makes a loss such as this all the more regrettable. Our sympathy goes to Mr. Lehman.

— o —

Piatt County (Ill.) Meeting July 18.

The third annual picnic of the Piatt-Macon County Beekeepers Associations will be held in the city park at Monticello July 18th. The features will be speaking, music, entertainment and a big basket dinner at noon. Honey drinks will be served.

This has been an unusually successful meeting in the past with good attendance. Everybody comes to have a good time, not just to sit and listen to a dull routine of speeches and needy discussions. Remember this is a picnic, so come to enjoy yourselves at Monticello City Park, July 18.

Willard W. Smith, Pres.,
Piatt County Beekeepers Association.

Western N. Y. Honey Producers' Meeting.

The Western New York Honey Producers' Association held its annual spring meeting at John N. DeMuth's, at Pembroke. Mr. DeMuth's son, Jordan, arrived from Florida with 480 colonies of bees just before the meeting. Much time was spent examining the bees. The following officers were elected: president, John Leonard, Scottsville; secretary and treasurer, Geo. E. Norris, Batavia; directors, James Sprout, Lockport, John N. DeMuth, Pembroke, Otto Johns, Cowlesville, Howard Myers, Ransomville, and Amon Mason, Batavia.

It was voted to hold a summer meeting and picnic August 7 at a place to be determined later.

George E. Norris, Secretary.

— o —

Proposed Attendants for Bee Shipments.

The railroads are proposing in Docket No. 70, Subject No. 10, to require all shippers of live bees in carloads to supply an attendant to accompany the shipment. The carriers will supply free transportation to such attendant for the going movement, but no return transportation will be supplied except in instances where tariffs of individual carriers provide for such return transportation.

Those interested in the outcome of this proposal may secure information regarding exact date of hearing or method of supplying written arguments by writing the following: Official Classification Committee, 143 Liberty Street, New York, New York; Western Classification Committee Room 202, Union Station, Chicago, Illinois or the Southern Classification Committee, Room 1015, 101 Marietta Street, Atlanta, Georgia, prior to July 7.

Kenneth Hawkins.

— o —

Inspection on Vancouver Island.

Members of the Vancouver Island Beekeepers Association, meeting recently at Victoria, B. C., expressed the opinion that the Apiary Act in the province was ineffective, and would continue so until an inspector for Vancouver Island were appointed.

It was pointed out that since the death of the former bee inspector, the industry had been neglected, and members decided to ask the department of agriculture to take steps for immediate appointment of an inspector.

There are from 250 to 300 beekeepers on Vancouver Island, each having an investment of from $50 to $2,000, and these investments were entitled to protection under the Apiary Act, it was felt at the meeting.

F. H. Fullerton,
British Columbia.

Ohio Meeting August 4 - 5.

The summer meeting of the Ohi beekeepers which is scheduled August 4th and 5th at Medina promises to be one of the largest summer meetings of the year. The two days' program will be crowded with tours, educational talks and entertainment. In reality, this meeting will be regional in scope as Indiana, Michigan and Pennsylvania beekeepers will attend and prominent speakers from these states will participate in the program.

W. E. Dunham,
Ohio.

— o —

Resolutions in Order for National Meeting at Washington.

President Reese, of American Honey Producers' League, is anxious to have all resolutions presented to the resolutions committee far enough ahead of the League meeting at Washington, D. C., so that the resolutions can be properly compiled and submitted by the resolutions committee.

This is a request that any beekeepers having resolutions which they deem desirable for meetings, prepare them in a tentative form and submit to the chairman of the resolutions committee who is Mr. Geo. W. Bohne, Luling, Lousiana, or to Mr. E. G. LeStourgeon, San Antonio, Texas, secretary of the resolutions committee.

Other members of the committee are M. J. Deyell, M. G. Dadant, and H. F. Wilson.

— o —

Another Pioneer Passes On.

We have just learned of the death of Mr. J. W. Rouse of Mexico, Missouri, which occurred on May 29. Mr. Rouse was 80 years old. Our younger readers probably will not have been acquainted with him but he was one of the pioneers in Missouri beekeeping, had been president of the association and was very active until his retirement some years ago.

Mr. Rouse wrote a 100-page book "The Amateur Beekeeper" which had gone through several editions.

— o —

Berkshire County (Mass.) Show.

The Berkshire County Beekeepers Association again goes ahead. Our latest enterprise was the Hi-Boys and their Radio Rangers, presented by the National Broadcasting Company. They gave a show and a dance in Pittsfield to a good house. The tickets that were sold and the posters distributed throughout the county advertised the association as sponsors. We also received three weeks' free advertising over the radio plus paper write-ups.

We believe that this will go a long way in putting the association in the limelight and increase honey sales for the coming year. We find that in the last few months we have stirred up a large amount of interest and curiosity.

William V. Kibby, Sec.,
Berkshire County Beekeepers Association.

— o —

Tentative Dates for Indiana Meetings.

Madison County Field Day or Tour. Meet at Frankton, Saturday, A. M., July 31, 1937.

Indiana State Round-Up at Newport, Indiana, August 27 and 28, 1937.

Indiana State Fair, September 4 - 10, 1937.

— o —

Missouri Meeting July 11.

The Missouri beekeepers will meet at the home of J. F. Diemer near Liberty, Missouri, July 11th. Bring your picnic baskets, and let's have a regular old time meeting. It is not sponsored by any association. We want all beekeepers from one colony to a thousand to come to enjoy themselves and see demonstrations in queen rearing, queen introduction, uniting, an exhibit of disease under glass, the preparation of colonies for indoor wintering (a new discovery).

One hour for a business meeting. The ladies will be entertained by Margaret Diemer.

J. F. Diemer and Guy Diemer,
Liberty, Missouri.

— o —

John F. Moore Passes Away.

With deep sorrow and a keen sense of personal loss, the members of the Seneca County (Ohio) Beekeepers Association record the passing of one of their most valued and beloved associates, John F. Moore, who died on April 29th, 1937, in his home in Tiffin.

Unquestionably one of the outstanding authorities on bee culture in this section of the country, Mr. Moore gave freely of his time and of his knowledge to the furtherance of the industry in general and to the assistance of every individual who sought his advice.

Always modest, but possessed of boundless enthusiasm, he contributed more than anyone shall ever realize or appreciate to the development of bee culture in this community. In so doing he benefited not only this association and its members, but the community at large. In every activity of his life, his personal interests were invariably subordinated to the general good.

His passing has served to remind us that he was one of those rare individuals whose place truly cannot be filled.

John F. Buchanan, Sec.-Treas.,
Seneca County (Ohio) Beekeepers Association.

Report of May Meeting Piatt County (Ill.) Associaton.

Saturday night, May 15th, the Piatt County Beekeepers Association met at Glenn Smith's, at Monticello. L. E. Gooch of Lexington, Kentucky, president of their association gave an account of conditions in his own state. Mr. Gooch lives in the Blue Grass district where they have a very short flow from white clover only. Mr. Hill, of Montgomery Ward & Co., of Decatur, spoke of his company's desire to serve the association. Vice President E. F. Wikowsky gave an account of his work with package bees. A lively round table discussion followed, with refreshments served by the ladies.

Willard W. Smith, Pres.,
Piatt County Beekeepers Association.

ABJ

The House Is on Fire

By Harold Luckner,

Oregon.

WHEN you discover that your house is on fire and that the fire is out of control what do you do? Call the fire department of course. Then you carry out as much of the furniture and your other possessions as you can before the flames reach them. That's what the bees do when they think their house is burning. They fill up on honey, presumably to save at least a stomachful before the situation gets too hot. When you smoke a colony the bees rush to the nearest open cells and load up. Apparently they believe the place is burning, for as the old saying has it, "where there is smoke there is fire." That, I think, is a very important consideration wholly overlooked by Mr. H. A. Seabright in his article in the April number of the Journal.

He wants to know why smoke causes the bees to act more gently. I very much doubt if it does in the basic, fundamental, sense of the word, any more than a man who is trying to save his furniture from fire is made more gentle thereby. He is doing the most important thing. That may be what the bees are doing. Getting a load of honey to start off with in their new home is more important to them than trying to defend a home against a hopeless fire and the man who is responsible for it.

There are a couple of other statements in the article which are inaccurate. Mr. Seabright says that carbon dioxide is a colorless and odorless gas. It is colorless all right but it has a pungent odor. This, however, is of no particular importance as far as the purpose of his article is concerned.

He says, in referring to carbon monoxide gas "—that this gas causes coagulation of the blood of humans and if continued long enough results in death." Mr. Seabright is mistaken, absolutely. Carbon monoxide gas does not coagulate human blood. The blood contains a complex substance called haemoglobin. When air is breathed into the lungs the oxygen in it unites readily with the haemoglobin of the blood to form oxyhaemoglobin, which is a very unstable compound. This substance is carried in the red corpuscles to the various parts of the body where it is needed. When it comes in contact with the tissues it readily gives up its oxygen and returns to the lungs for another load. Now, when the oxygen of the air is polluted with carbon monoxide the haemoglobin is not able to absorb oxygen but takes up carbon monoxide instead. This forms a compound which is much more stable than oxyhaemoglobin. The result is that the body is not able to obtain oxygen and suffocation takes place which will terminate in death if continued for any great length of time. Fundamentally this suffocation is no different than that which comes from drowning and it is not a matter of blood coagulation at all.

Mr. Seabright says further, in speaking of carbon monoxide, "It is quite likely that this gas has a retarding influence on the circulatory system of the bees, resulting in less action or quieter bees." If Mr. Seabright makes his deductions from the effects of this gas upon human beings he is badly mistaken. When a human being is suffering from the effects of this poisoning the respiration and heart action are speeded up very greatly—to such an extent that death sometimes occurs from heart failure. This is due to the efforts of the body to rush blood to the lungs for oxygen and for the lungs to supply the oxygen—which the blood is not able to absorb. If the same thing happens in bees—which is doubtful as I shall explain—the circulatory system would be in a wild state of activity.

It is not likely that the carbon monoxide gas in the smoke sent into the hive will have any particular effect upon the circulatory system of the bees. In the first place the smoking doesn't continue for a long enough time and there isn't enough of it. It is true that very small amounts of this gas in the air are dangerous to human beings — but dangerous only when it has been breathed for a much longer time than the bees breathe it in the concentrations found in such smoke as is used upon them. Men can breathe smoke for extended periods of time, as forest fire fighters will tell you, without suffering ill effects as far as carbon monoxide gas is concerned although they may cough from the smoke and their eyes stream tears. The exhaust from automobiles contains higher concentrations and these are deadly in shorter periods of time.

It is not likely that bees would absorb this gas into their blood in the same way that humans do. The red color of the blood is caused by the presence of iron in the haemoglobin in the form of ferric oxide which is common rust—the same rust that you find on your smoker if you leave it out in the rain. It is the oxygen in this ferric oxide that the body utilizes. And it is carbon monoxide which replaces this oxygen and forms a compound which is likewise red but of a different shade. I have seen many crushed bees and examined their body fluids. There is no sign of any color which would indicate the presence of either of these two compounds of haemoglobin. If carbon monoxide is absorbed into the blood stream of bees it must be in some other chemical combination than is found in human blood. If this is true we don't know whether the carbon monoxide would form a more or less stable compound with bee blood than would oxygen. Therefore we don't know to what extent, if any, that the gas would tend to prevent the absorption of oxygen.

I am not sharp shooting at you Mr. Seabright: I enjoyed your article. It has much in it that is good. But I am reminded of a saying from the Book of Books: "Ye shall know the truth, and the truth shall make you free."

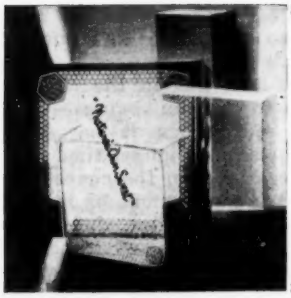
ABJ

Early Supersedure

I am glad you quoted Mr. Burleson in your last issue who seems to believe that early supersedure is due to carelessness on the part of the beekeeper receiving a package. Many think that way.

I have received packages for 15 years and have had no trouble with supersedure. I get my bees from a good producer. I have seen packages that go to the bow-wow and try to supersede and I am sure it was not the fault of the receiver. The queens were not good; the breeder used old larvae, chilled the queen or treated it just plain rough or careless all the way from the egg to the package.

A. G. Pastian,
South Dakota.



HERE AND THERE

BEING SMALL ITEMS OF INTEREST TO MANY

ALABAMA

We have been clearing away the wreckage of a tornado that crippled us during the past few weeks and did a lot of damage to our bees.

Paul Cutts.

♦

CALIFORNIA

Last year was a dry year in southern California. I note questions about keeping moths out of stored combs. I stack my empty supers with combs spaced, in a heavy paper lined building, close the windows and burn a couple ounces of sulphur once every month. In 20 years I haven't lost a super. E. Guenther, Jr.

Honeyflow up to one week ago was all that any one could wish. Weather has been cold for a week, but is warmer today (May 26) and think that the bees will again bring in honey. Orange has yielded from fifty to one hundred pounds per colony and is all past for 1937. L. L. Andrews.

♦

ILLINOIS

In the recent flood I had 10 hives and they all floated away and the bees were drowned. I found one hive full of honey, but no bees, so I brought it home and set it in the yard. A swarm lighted on it and made it their home. There was 10 feet of water where I had my hives. I lost all my bee journals along with my bees.

Curtis Taylor.

♦

INDIANA

I am in the commercial orchard business and operate a small apiary. I try to keep my bees away from the orchards until a few days after spraying the blossoms; or the spray is not used until seventy-five per cent of the petals have fallen.

A few buds may open a few days later and there is where the danger lies most. I use both carbolic acid and paradichlorbenzene to keep the bees away from the fruit bloom, and during the last eight years there has been no bad result or stain from the use of these repellents. W. L. H.

♦

IOWA

I am back again as a small beekeeper. With your help and that of Prof. Paddock I have made a success of my bees and any small beekeeper can do the same.

August H. Zahn.

♦

KENTUCKY

I hate to bother you fellows with such small items, but I am a country doctor, the only one in a radius of 16 miles, practicing on horseback, and I have to have some diversion from this hard work; therefore, my hobby is bees and flowers — mostly bees.

I now have 38 hives and we have never produced any honey in sections. Thus, a brand new experiment. Please help by sending them to us at once as lin and sourwood are now in bloom.

Dr. Preston J. Jones.

♦

LOUISIANA

Markets are in favor of the producers here. Offers of 6½ cents for honey and 26 cents for wax were made during April. The 1936 crop is out of the hands of producers, and the variable spring weather indicates there will not be much surplus stored before May—possibly June.

Geo. W. Bohne, County Agent.
(News for Louisiana Beekeepers)

♦

MICHIGAN

This is my second year of beekeeping. I had a loss this winter which I attribute to a late spring delayed by wet weather. The bees were on a slope down which the rain washed excessively. The combs were mouldy. In February, the bees were flying and had considerable honey left, and every indication that the queen was then at work. Mrs. F. A. Shaw.

♦

NEBRASKA

Prospects for a honey crop in this territory are very bad at the present time due to the continued dry weather and the after effects of the past season. O. B. Miller.

Weather cold and some rain (May 14). Dandelion in full bloom. Some new sealed honey. Today sun is shining and warm. Expect to get in a good day. All of the farmers and back lotters are out of the picture.

Geo. Watt.

NEVADA

I have just finished working the bee yards. It has been a cold, tough winter for the bees. But in spite of a 12 per cent loss and a sprinkling of weak colonies, the bees are, on the whole, in good condition. The season is late, but normal, and the prospects for a crop seem better than they did a year ago at this time.

We have two yards that were requeened last season. They surely demonstrate the value of young queens in wintering.

The honey situation is good, although we have no honey to sell.

J. E. Patton.

♦

NEW HAMPSHIRE

My bees gathered sawdust left from sanding a fir floor and also gathered sap from a maple tree. I expect this is not uncommon, but it is interesting. Harold E. Mann.

♦

NEW YORK

I had one hundred colonies of Italian bees packed together and they were burned up by someone on the night of April 7. They were heavy with honey and brood. A loss of perhaps $1000. Stephen Blanchard.

I had a horse going blind with a white film over his eye which seemed to hurt. His eye was shut and watered. I dipped white honey into his eye with a feather for several nights. In a day or so the film was gone and the eye looked bright and good.

A subscriber.

♦

NORTH DAKOTA

The honey crop along the Red River Valley looks good to me as the sweet clover and alfalfa are nearly budding out and expect the flow to start by the 20th of June. We are getting plenty of rain, a heavy one at least once a week, the weather quite cool. With hot days and cool nights, there should be a bumper crop.

Lewis Lawrence.

♦

ONTARIO

I use 125 Jumbo, 10-frame, 1½ inch spaced hives and some hives with 11 frames. In 1935, the average production was 240 pounds; in 1936, not so good. J. G. Baxter.

INSTITUTE INKLINGS

Fourth Cookery Contest.

WE have rules, list of prizes, and entry blanks for the National Honey Cookery Contest to be held in conjunction with the meetings in Washington this next October. Copies of the entry blank, "How to Win Money With Honey" and the score card, etc., may be obtained by writing American Honey Institute, Madison, Wisconsin. No entries in this contest are to be accepted after the 22nd of October, 1937. All your items of honey cookery are to be mailed to American Honey Institute, Hotel Washington, Washington, D. C. Entries will not be returned. Be sure your package is properly addressed including your own address, and that it is accompanied by your entry blank to insure identification. Put this in a 3-cent stamped envelope and attach it to your package in which your cooking is mailed. Any individual may make more than one entry in each class, and an entry blank must accompany each one. There are three classes, Honey Pound Cakes, Honey Cereal Cookies, and Honey Candies with a chance for prizes in all three classes. Send to American Honey Institute for your information.

New Publications.

"Honey Helpings," a favorite, is now in revised edition, printed in blue and white as before with much new material.

"It's a Honey," also revised, a 6-page leaflet, all recipes using entirely honey for sweetening.

Members of American Honey Institute should have received the leaflet issued June 1st containing the announcement of the annual convention and the Honey Harvest Festival, Honey Week in the spring of 1938, items about the fourth National Honey Cookery Contest, summer meetings, and Ladies Auxiliaries. Any failing to receive this, drop a card to American Honey Institute and your copy will be forwarded to you. Also, the Institute has mailed to all auxiliary workers and home economists the issue of their news leaflet containing suggested summer uses of honey, details of the honey cookery contest, the Harvest Festival, the Washington meeting, the Honey Week for next year, etc.

The Institute has sent a circular letter to all honey packers suggesting that they sponsor a contest among those who use their honey so that any winner in the fourth National Honey Cookery Contest using their brand of honey be given a cash prize stated on the label of the jar or attached thereto, or in any other way brought to the attention of those who buy and use their particular brand of honey.

Don't forget the Institute leaflet "Canning With Honey." This is the season for using it. Copy free on request.

Publicity Items.

A Honey Recipe Brings $5000—and it wasn't a Honey Contest. Early in the spring, Armour and Company, Chicago, Illinois, ran a recipe contest. 125,000 women sent in recipes. These were judged by a committee of three: Prudence Penny of the Chicago Herald Examiner; Inez Willson of the National Live Stock and Meat Board; Prof. Lloyd Herrold, Northwestern University.

The results of this contest took some time to collect and the list of winners is just now being published and the first prize winning recipe appears in the Armour ad in June magazines.

Mrs. Carpenter's recipe (not menu) was judged the best in the group of Ham Recipes sent in and then out of the group of first choice from the five competing classes was again judged the best of five. A recipe using Ham and Honey brought Mrs. Carpenter **five thousand dollars.** Mrs. Carpenter is rather a young woman under 30 years of age and is simply interested in gathering up new food ideas and trying them out in her home. She lives a short distance outside of Boston on a small farm which is being paid for in part by her contest money. Note the recipe as sent in by Mrs. Carpenter and also the one adapted to the use of the small family by Miss Marie Gifford in her Testing Kitchen.

The Progressive Grocer (June issue) carried four pages advertising this prize winning recipe showing meat departments and grocers how to build a group display of all the products required for the preparation of the Menu with this recipe. The display included a jar of honey and a special poster provided by Armours.

Valuable publicity for honey during a so-called "off season," don't you think?

National Confectioners' Association.

This trade association held their fifty-fourth annual convention at Chicago May 24 - 28 and production, distribution, and legislative problems were discussed. An entertainment feature was "Candy Day" at Washington Park Jockey Club, Homewood, Illinois, at which time the delegates were given an opportunity to name the horses after candy bars. The Institute suggested several honey names for the horses. An Institute representative attended the discussions during two sessions and learned that the budget of this organization was $45,000 during 1936 and was being increased for 1937. The Du-Pont Cellophane Exhibit included two types of hard candies with honey centers now being introduced to the trade in individual cellophane wrappings. By visiting the various exhibits and hearing the discussions, it was very evident that there are splendid possibilities for utilization of large amounts of honey in confectionery channels if the basic information on the peculiarities of honey as they apply to production of confections can be secured. This involves candy research and is one of the problems the Institute will tackle as soon as its budget permits. Just another type of insurance to protect the producer from a carry-over in case of a bumper crop. Commercial utilization will prevent carry-overs if properly developed.

National Convention.

A really different program is being arranged for all **"Instituters"** attending the Washington meeting. Institute Day will be October 27 and we hope there will be a large turn-out. The special meeting of the ladies in the interest of the Auxiliary work will be held Tuesday afternoon, October 26th. Would like to have all **"Instituters"** who expect to attend this meeting write us.

—*ABJ*—

A Correction

There was a mistake in my article "One Method of Swarm Control in Comb Honey Production," page 276, in the June issue. In discussng rearing queens in the divisions, these divisions were made May 7th and 8th and queens were laying by the 20th. However, a queen cannot be reared in 12 days and be laying eggs at the end of that time also, as it takes 16 days to rear a queen and 3 or 4 days before she is laying eggs. The date was supposed to be from the 7th or 8th of May and laying the 28th. Since this is my error, please excuse me.

These divisions received one comb of honey and two of brood with eggs and bees to build their own cells. Some of the larvae from the eggs were probably a few days old when queen cells were built, bringing the queens to maturity sooner than expected.

Lewis Lawrence,
North Dakota.

—*ABJ*—

Utah Honeyflow

According to State Inspector Wakefield, of Utah, the honeyflow is good in the heart of the state. The honey is of very good quality and very clear. Inspector Wakefield reports about 3 per cent disease.

Glenn Perrins,
Utah.

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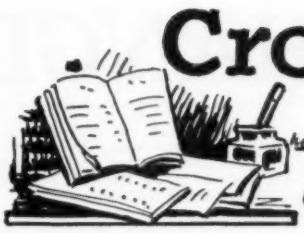

Crop and Market Report

COMPILED BY M.G.DADANT

The following questions were submitted to Crop and Market reporters:

1. How is the crop so far, compared to 1936 at the same date?
2. What are honey prospects for the balance of the season?
3. Are honey plants better than you anticipated earlier?
4. How nearly is old honey cleaned up?

June 1936 - June 1937.

Along the eastern seaboard and in the New England states it is generally felt that conditions so far are equal to those which occurred at the same time in 1936. Pennsylvania conditions are spotted. In South Carolina the crop will not be as large, it is believed. The southern states, from Florida to Texas, report conditions equal to or better than those in 1936. Sections of Georgia and Florida have already harvested crops of thistle, palmetto, and gallberry honey. The interior of Florida is far behind, owing to erratic weather conditions. In Arizona the crop is not quite up to that of last year, but in New Mexico it is better. In California, except in the northern part, reporters find the crop from two to five times better than in June, 1936. Although the figures are enthusiastic, they probably do not mean a great deal, since last year's orange crop, it will be remembered, was a failure. The intermountain territory reports conditions about the same. With few exceptions the season is backward over the entire Middle-West and there is little basis for comparison with last year. Next month's report will show definitely what has happened. Generally speaking the Middle West, particularly western Indiana, Illinois, and eastern Iowa are in much worse condition now than at this time last year, owing to lack of the clovers.

Honey Prospects.

In the East prospects for a flow are favorable. There has been much rainfall and a fair flow is expected over most of that territory, although at the time of these reports New England beekeeping was too little advanced to permit more than a guess at the likelihood of the ultimate crop. In the South conditions favor a good crop. There has been additional rain since the last report but there is no complaint that too much rain has fallen. Evidently the prospects in the southern states are rosy. There is not much promise of a crop in Arizona, but New Mexico thinks that prospects are very good. As was expected, California will have a fair crop only. Recently in the southern districts there has been cold weather and fog while the sages were blooming. Northern California expects an "average" crop. In the Northwest prospects look good. Forecasts in the intermountain territory range from "fair" to "normal" with the explanation that the crop will probably not come up to earlier expectations. All parts of Colorado but one are pessimistic and with good reason—cold weather and rain. However, with warm weather, this may turn into honey-producing territory, if plants are available. Southeastern Colorado is the exception and pronounces its prospects very bright. In the Middle West scarcity of all the clovers will be responsible for the below normal crop which is generally expected. The ice storm in mid-winter also did great damage to much of the clover which survived the drought. The clover now standing is widely scattered. A few localities in Ohio, Kansas, Nebraska, and Michigan expect really good crops. Minnesota beekeepers, except those in the extreme eastern part of the state, will be disappointed if the flow is not normal. Prospects are better than last season in British Columbia, very good in Manitoba (which may mean two excellent seasons consecutively for that province), poor in Saskatchewan.

Honey Plants.

Southern Maine and western Vermont find nectar-yielding plants more abundant than they had expected. Otherwise, throughout New England and the eastern seaboard there is little deviation from the last report of normal honey flora. The same report comes from the South. Everywhere rains have brought honey plants into line. There is no complaint from drought, even from Texas. Arizona generally seems to be having a hard time. Plants there are no better than expected. But in New Mexico honey flora conditions have improved. Near Los Angeles and south plants are possibly 75 per cent of normal, against excellent earlier prospects. In central California conditions are spotted, with an average stand in the northern part of the state. In Washington honey plants are in excellent condition, and the intermountain states are about as expected, with the exception, once more, of Colorado. There the honey plants in most sections of the state are not as promising as they appeared to be earlier in the season. There is little improvement in the Middle West. In comparison with stands other years, clover is practically non-existent in most parts of Illinois, Iowa and Indana. However, in the dusty plains states there has been an improvement over that which was expected a month ago, owing, of course, to recent rains. Plant conditions are more interesting in the northern areas, Michigan, Wisconsin, and Minnesota, which have from "fair" to "normal" stands in various localities over those states. British Columbia and Manitoba are looking forward to the season. Saskatchewan is not.

Honey on Hand.

Practically all of the 1936 crop of honey is out of the hands of the producers. Buyers will find honey from last season in only a few localities in the United States and Canada. Beekeepers in western Colorado still have honey. There is a little left in central California and around Los Angeles. There are quite a few lots left in central Michigan, strikes and their attending misfortunes having slowed up the demand. Southern Nebraska beekeepers still hold some of the old crop. The spring crop is moving well in southern Texas, with prices steady, and in central Florida some of the new crop, which is a mixture (mostly palmetto), is being marketed. In Manitoba lots turn up from time to time, as is the case always when there has been a large harvest the season before.

Summary.

California is our largest producing state, and as its prospects this year are better than last year and certain other years, we cannot but believe that there will be a greater yield than possibly is expected in the state itself.

Beekeepers in the sweet clover states should not think that absence of large fields of sweet clover, alsike, and Dutch clover at every cross-road means necessarily that there will be no clover yield this year. The government's plan for legume planting has caused during the past two or three years a great deal of sweet clover to be sown, and it is obvious that everything now growing may not have been apparent to the reporters.

For these reasons it is not unlikely that the crop the country over may exceed present expectations.

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

"SHE-SUITS-ME" QUEENS. None better. Only choice selected queens sent out. Line-bred, three-banded stock. Prices after May 20, one queen $1; six for $5. Special prices on large quantities. Send for circular
Allen Latham, Norwichtown, Connecticut.

THREE-BANDED ITALIAN BEES AND Queens of fine quality. A trial order will convince you. Satisfaction guaranteed. Marketing Agreement prices. Alamance Bee Company, Geo. Elmo Curtis, Mgr., Graham, N. C.

LIGHT 3-BANDED ITALIAN QUEENS. We are one of the largest growers of queens in the United States, producing 100 queens or more daily. We ship only young, laying queens and guarantee them to be purely mated and satisfactory to you. You are the judge. Price, 50c each.
The Walter T. Kelley Co., Paducah, Ky.

EXTRA YELLOW Italian queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested $1.00 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

GOLDEN QUEENS producing bees solid yellow to tip, untested 50c; tested $1.00. Health and satisfaction guaranteed.
H. G. Karns, Green Bay, Va.

GOLDEN ITALIAN QUEENS. Untested 50c. Select untested 75c. Tested $1.00. Select tested $1.50. Satisfaction guaranteed.
Sam Hinshaw & Son, Randleman, N. C.

"WE WANT DEALERS"—Quality queens at regular Trade Agreement Prices. Saving on advertising passes to customers in quality. Choice queens 50c, any amount. Discount to dealers of 15%. We need more dealers in most states. Head Apiaries, Winnfield, La. "If you use my queens this year you will want my packages next spring."

I WANT YOUR QUEEN TRADE the balance of the season. Queens that fill your brood chambers with brood which in turn becomes bees that fill your supers with honey.
O. P. Hendrix, West Point, Miss.

REAL PETS—Gentlest bees under the sun. Guaranteed that you can manipulate them without smoke or veil under any weather conditions. Only yellow bees with long tongues. Non-swarmers. Great honey gatherers. $1.00 each. More than ten, 75c each. June to October.
Brown's Apiary, Cape May Court House, N.J.

GOLDEN ITALIAN QUEENS that produce workers very gentle to handle, good honey gatherers. 30 years a breeder. I don't let a colony build over 12 cells at the time to get good queens. Satisfaction guaranteed. Untested 50c; tested $1.00; select tested $1.50.
D. T. Gaster, Rt. 2, Randleman, N. C.

JOYFUL QUEENS—Leather colored Italians. Good honey gatherers and gentle. 50c each. Joy Apiaries, Walter Frierdich, Belleville, Illinois.

GOLDEN QUEENS. Excellent quality that produce hardy, gentle workers. Personally reared. Untested 50c; tested $1.00. Health certificate. Safe arrival and satisfaction guaranteed.
O. E. Brown, Rt. 1, Asheboro, N. C.

LONG-TONGUED CAUCASIAN Bees and Queens Gentle, prolific, hardy. Better honey gatherers. Winter better. Queens 50c each. 15% discount to dealers.
P. B. Skinner Bee Co., Greenville, Ala.

CAUCASIAN QUEENS 50c. Package bees agreement prices.
Miller Caucasians, Three Rivers, Texas.

ITALIAN QUEENS, reared by double-graft method. Alonzo McKay, Rt. 1, Vicksburg, Mississippi.

NORTHERN ITALIAN QUEEN BEES, personally reared, 3 banded. Satisfaction guaranteed. Price 50c.
N. J. Smith, Coopersville, Michigan.

MOUNTAIN GRAY CAUCASIAN QUEENS, 50 cents each. By return mail.
Tillery Brothers, Rt. 4, Greenville, Alabama.

DARK ITALIANS—The best bees on earth, we think. Young laying queens, full of eggs and pep. Quick shipment, large or small orders. Price 50 cents each.
J. F. Diemer Co., Liberty, Missouri.

WILL TRADE—Hustling 3-Band Queens for white honey and supplies.
Caney Valley Apiaries, Bay City, Texas.

QUALITY QUEENS—3-banded leather colored Italian queens. Give me a trial order. 50c each. Carolina Apiaries, Dalice E. Crawford, Mgr., Haw River, North Carolina.

"Phenix City, Ala, June 4th, 1937.
Mr. Walter Newcomb,
Orsino, Fla.
Dear Sir: Thanks for the money order for $2.50 for five Silver Run Queens in our introducing cages. All you have to do is be sure the colony to be requeened has no queen or queen cells. Hang the cage between frames of brood. She will be laying within three to five days, but wait six to ten days to remove cage. Respt., Silver Run Apiaries." Good stock. Good queens. No loss in introducing Simplicity. Saves time and money. Try our queens.

QUEENS—A limited number of select Italian stock, warranted purely mated. No inbreeding permitted. 40 years' experience. 50c each.
Thomas Broderick, Moravia, New York.

HONEY FOR SALE

FOR SALE—Northern white extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

CHOICE Michigan Clover Honey. New 60's.
David Running, Filion, Michigan.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—Well ripened clover honey, car lot or local shipments. Will be pleased to submit sample. THE COLORADO HONEY PRODUCERS' ASSN., 1324 Market St., Denver, Colorado.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

WHITE CLOVER HONEY in 60-lb. cans at 8c lb. Write for prices on large quantities. Sample 15c.
F. W. Summerfield, Grand Rapids, Ohio.

FOR SALE — Fancy, well ripened, white sweet clover honey in 60-lb. cans. Extra good quality. Dadant & Sons, Hamilton, Ill.

DELICIOUS PALMETTO HONEY in new sixties.
Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—A car of honey.
Geo. Seastream, Moorhead, Minn.

FOR SALE—Clover extracted honey in sixties, 8c; amber 7c.
H. G. Quirin, Bellevue, Ohio.

NEW CROP CLOVER comb and extracted honey ready to ship July 15.
F. J. Smith, Castalia, Ohio.

FOR SALE—California orange and sage honey, carload lots direct from producer. Extra fine this season. H. J. Warr & Son, 1838 Main St., Riverside, California.

HOWDY'S HONEY—Comb and extracted in sixties will be ready for shipment this month. Howard Potter, Ithaca, Michigan.

TUPELO HONEY, barrels 7½c lb., sixties 8c lb. Anthony Bros. Honey Co., Apalachicola, Florida.

HONEY AND BEESWAX WANTED

WAX worked into comb foundation, accepted in trade for supplies or bought. Write for our proposition and shipping tags.
Walter T. Kelley Co., Paducah, Kentucky.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

WANTED—All dark grades of honey.
C. Jankowski, Russell, Illinois.

WANTED—Extracted Honey. Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honeys. We stock all varieties. HAMILTON & COMPANY, 108 West Sixth St., Los Angeles, California.

WANTED — White and Amber Extracted Honey, any quantity; also beeswax. Write THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

ALL GRADES, including capping melter honey. Prairie View Apiaries, 2005 Fullerton, Detroit, Michigan.

WANTED—Comb, chunk comb, white and light amber extracted honeys. Any amount.
Central Ohio Apiaries, Millersport, Ohio.

FOR SALE

I have some good Caucasian bees and bee equipment for sale. Also one-frame extractor. For information please write
Harold J. Perkins, Rt. 2, Tampico, Illinois.

EXTRACTOR — Root-Cowan extractor and capping can. Good condition. Extractor holds four Modified super combs. Both extractor and capping can for two-thirds price of new. J. L. McMurry, Clayton, Illinois.

FOR SALE—One 24-frame radial honey extractor in first class condition. Used very little. Price $40. Clarence B. Lockrow, Rt. 1, Buskirk, New York.

FOR SALE—Several thousand 5-gallon honey cans in corrugated cartons. Wide mouth. Used once. Guaranteed as good as new. Price 22c each f.o.b. Millesport. Send your check and state quantity.
Central Ohio Apiaries, Millersport, Ohio.

FOR SALE—Large lot good used cans and cases. Edw. Klein, Gurnee, Illinois.

PACKAGE AND QUEEN BUSINESS, in Gulf Coast State. 300 colonies, 600 nuclei, other equipment. Best cash offer above $3500 gets all. Box 10, care American Bee Journal.

WANTED

WANTED—Copies of A-B-J for March, May, June, October, December, 1931. Also full sets of 1931 copies. Do you have any you do not care to keep? Write to American Bee Journal, Hamilton, Illinois.

WANTED—FILTER PRESSES, all sizes and types. Also Bottling Equipment. CONSOLIDATED PRODUCTS CO., INC., 13-14 Park Row, New York, N. Y.

WANTED—Men or women to sell beekeepers' specialties to dealers and beekeepers. Interesting proposition and excellent opportunity. Write, H. Blitz,, P. O. Box 3452, Philadelphia, Pennsylvania.

WANTED—Man for balance of season.
Edw. Klein, Gurnee, Illinois.

WANTED—A radial extractor.
Robert J. Peach, Arlington Heights, Ill.

SUPPLIES

BEST QUALITY bees supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colorado.

BEST QUALITY soft white pine Hoffman frames $30.00 per thousand. Complete line of bee supplies manufactured by us. All prices the lowest. Free catalog.
The Walter Kelley Co., Paducah, Ky.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

FOR SALE—Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices.
Hamilton Bee Supply Co., Almont, Mich.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates.
E. S. Robinson, Mayville, N. Y.

ATTRACTIVE PRICES on bee supplies and comb foundation. Send for catalog. Saves you money. THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

SAVE QUEENS. Safin cages now 15c. Ten for $1.00.
Allen Latham, Norwichtown, Connecticut.

YOUR WAX worked into medium brood foundation for 15c pound, thin super 22c. Ten pounds medium brood foundation $4.10.
Fred Peterson, Alden, Iowa.

THE PINARD nailless queen bee shipping cage. Send for sample. Agents—Diamond Match Co., Chico, Cal.; Weaver Apiaries, Navasota, Texas. A. B. Pinard, Manufacturer, 810 Auzerais, San Jose, California.

QUALITY BEE SUPPLIES at money-saving prices. Prompt shipment. We take honey and beeswax in trade.
The Hubbard Apiaries, Onsted, Michigan.

PROMPT SHIPMENT of Continental containers to Minnesota and North Dakota beekeepers. Write me for carlot or less, delivered your station.
Gordon Bell, Grand Forks, North Dakota.

24—16-oz. Modernistic jars 85c, 720 $24.00, 1440 $45.00. 5-lb. medium brood foundation $2.40. 5-lb. super foundation $2.50. Write for price on 2½-lb., 5, 10 and 60-pound cans. Rettig Supply Co., Wabash, Ind.

MISCELLANEOUS

PLANS FOR POULTRY HOUSES—All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c.
Inland Poultry Journal, Spencer, Indiana.

Fortune in "Bee Business"

(Continued from page 325)

we probably cannot aspire to any great selection in the family food.

We quote again: "Honey is as variously flavored as wine. There is honey that is bland and mild, and honey that is rich and heady. The U. S. provides some 250 varieties, but of these only about twenty-five are commercially important. There is honey that is wholesome and honey that is nauseous. There is white honey from fireweed, yellow honey from goldenrod, brown honey from poplar. There is even green honey from thistle. There is honey that is liquid and honey that is granulated. There

is extracted honey, chunk honey, cut-comb honey, and section-comb honey. And at this point it might be well to decide what honey is. Broadly, it is a super-saturated solution of three sugars, levulose, dextrose, and sucrose. Yet if a chemist tried to produce a similar solution in his laboratory, the result would be unpredictable. For honey is made up 80 per cent of sugars, a concentration that ordinarily crystallizes when the chemist produces it but doesn't when the bee makes it in the hive. Just what the bees do to keep their honey liquid (even for years) is as mysterious today as it was when Virgil set down in his Fourth Book of Georgics that bees could be generated from carrion, and that honey was the wind-bred bounty of the sky."

Once again, let us criticize our own industry. As long as honey is only to be classified as a **casual** and not a standard product, we will have great difficulty finding for it a permanent national market.

To quote again: "The U. S. could get along without honey but it could not get along without the honeybee, since the bee is the most effective insect pollinizer in the land. Sufficient bees turned loose in an orchard or field can double or treble the crop. And in cross-pollinizing such fruits as apples, pears, plums, and sweet cherries, the bees add to both their variety and abundance. Particularly important is the pollinization of forage crops like clover and alfalfa, for which the bee is 75 per cent responsible. In dollars and cents the value of the bee in agriculture is inestimable. It is worth at least twenty times its value as a producer of honey; and in some areas the ratio is even greater."

". . . The average beekeeper does not depend on honey for his entire income as do the larger producers, who get as much as 200 pounds per hive, nor does he keep bees for the simple joy of it as do the backlot amateurs. He is a farmer, and to him honey is a decidedly minor item. And unless he is aware of the bee's importance as a fertilizer of crops, so is the bee."

It depends upon what one thinks of as a decent income. It is on this point that we think the writer of the article to be perhaps with too little information. Many beekeepers have lived comfortably long lives and done as well as any other class of agriculturists without anything else from which to obtain an income but bees. I guess it's just probably a case of individual initiative and business acumen.

All in all, it is a splendid article. The Fortune magazine is published by Time, Inc., 135 East 42nd Street, New York. The subscription price is $10.00 per year, twelve numbers, all deluxe, large size pages with many pictures; authoritative articles; worth while for those who can afford it.

Four Years of Beekeeping in Hawaii

(Continued from page 327)

bloom and colonies grow strong enough to permit removal of brood.

I hadn't time for much queen rearing and I found it impractical to import queens by steamer and "Clipper" rates of fifty cents per half ounce are too great.

My plan for making increase, which I learned from the Japanese, was to take two frames of brood from stronger colonies, being careful not to get the queen and to make four frame nuclei. These were placed anywhere in the yard that there were vacant stands. We were careful to pull away all grass and weeds and grease the nails of the stand against ants. With few failures, these nuclei would rear first class queens and equal in production most of the overwintered colonies. Mr. George Marvin thought this plan was too crude and simple to be any good and I know many beekeepers who do not know Hawaiian conditions will have a similar reaction.

In southwest Texas I had many close calls with large rattle snakes and I did feel a bit relieved in snake free Hawaii. It also was enjoyable to be in a land free of fog and mist and cold where work in the open in your shirt sleeves may always be enjoyed.

I encouraged the idea of giving more publicity to Hawaiian beekeeping to remove the senseless prejudice some beekeepers in the States seem to have against the little million pound crop of honey Hawaii ships to the mainland, her only available outside market. By the cooperation of Mr. H. H. Warner, director of Hawaii's experiment station quick market reports are now given from the islands and a U. S. grading system for honey has been made available to producers. Plans are under way for enactment of a modern American foulbrood law for the Territory. This will mean much in restoring beekeeping to its former place of importance. It will increase the feeling of good will between the States and Hawaii and will do much to increase the profits of individual producers.

—*ABJ*—

Uniting Bees

A comment was made in "All Around the Bee Yard" in the February issue about uniting bees in which it is said "We have united promiscuously at most times and seldom have much fighting. Of course, it is done with the least disturbance possible and I think that is the secret of success in uniting bees."

Commenting on this, J. F. Diemer, of Missouri, writes, "You can unite a hundred colonies of bees together if there are no loose queens among them, and there will be no fighting."

The Postscript

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Rev. W. Ewart Dudley, of Britt, Iowa, writes me that he is so sensitive to bee stings that he must overcome that tendency or give up the bees. One sting makes him extremely sick. The Postscript would welcome reports from those who have found it possible to overcome such a high degree of susceptibility. There are others in the same position and it is highly desirable to make public any method that offers any promise of relief.

—ABJ—

A very interesting letter comes from Natt N. Dodge, of Grand Canyon, Arizona, commenting on Dr. Beck's statement that stings are likely to be more serious after a big meal. He states that in his own experience he has noticed a number of times that he was seriously affected following a heavy dinner when the usual number of stings had but little effect at other times. It seems strange that beekeepers had not observed this peculiar condition before.

—ABJ—

Letters still continue to come to me asking to buy queens of the stock which has proved itself to be disease resistant. Let me repeat that no queens are being sold. It too often happens that daughters of such queens fail to show the same results and we are by no means sure that it will be possible to develop a strain which can be depended upon to inherit resistance consistently. Until such a thing is possible we can only wait for results. A study of inheritance is under way under direction of James I. Hambleton, of the Bureau of Entomology at Washington. It is hoped that in time the problem can be successfully mastered.

—ABJ—

The June American Magazine has an interesting note about a man 84 years of age who spends the winters in a dugout underground and lives entirely on honey until spring. There have been cases reported where men lived on milk and honey and the Bible tells of John the Baptist who lived on locusts and honey but this is the first time I have heard of anyone living on honey alone.

—ABJ—

Edward M. Kellner, of far Czechoslovakia, answers the question in the April Postscript concerning the value for honey of the Japanese pagoda tree, **(Sophora Japonica)**. He says that it is highly recommended as a nectar bearing tree in Central Europe. Like the black locust it is a legume and thus fits into the soil conservation program.

—ABJ—

Mr. Kellner gives an interesting account of the difference in behavior on different soils. A small grove on a sandy hill yields nectar but sparingly while another on deep black rich soil yields freely and the hives on scales show gains as long as the blooming period lasts.

This pagoda tree resembles the black locust except for the absence of thorns and the blooming season is later, blooming in August whereas the locust flowers in June.

—ABJ—

C. T. McKnight sends me a sample of clover from Louisiana which appears to be new. He says that the bees work on it like wild and that it thrives on the Red River limestone soils. It is not described in the manuals within reach but is probably Persian clover. Perhaps it may prove to be equally valuable in other sections of the South and may provide another source of bee pasture which will one day be important. So many of our honey plants have been introduced from abroad that we beekeepers may well keep an eye on any new forage crop which comes along.

—ABJ—

A very interesting letter comes from an old acquaintance who formerly managed about 400 hives of bees very successfully. When foulbrood came into his neighborhood he fought it hard and cleaned up again and again but his bees became reinfected so often that disease finally killed most of his colonies.

A few colonies successfully resisted the disease and showed apparent immunity. These he offers for test in our experimental apiary.

—ABJ—

It is from stock such as this that our resistant bees have come. It is from them that it is hoped that a strain can be bred which will be sufficiently resistant to remain free from contagion in badly diseased areas. We do not anticipate getting anything to clean up combs once badly infected but hope to get bees which will not take disease in the first place. Resistant stock may be looked upon as a source of prevention rather than a cure for disease.

—ABJ—

I very much doubt if there is such a thing as complete immunity to American foulbrood among honeybees. It seems probable that there is a limit of exposure beyond the ability of the best of them to resist but it appears that some are able to overcome the amount of infection which is likely to come to any colony under ordinary conditions.

—ABJ—

A Nebraska reader writes to tell us that his yellow Italians took disease so fast that he shifted to Caucasians three years ago. So far none of the Caucasians have taken foulbrood but five colonies of Italians which remained had the disease this spring. He is thus convinced that Caucasians are more resistant than Italians. Numerous similar reports come to us. Some Caucasians are very susceptible from indications in our experimental apiary.

—ABJ—

D. C. Wing, former editor of Breeders Gazette and now in the Agricultural Administration in Washington, comments on the fact that all honeys are good but some are better than others. He says that alsike honey is good enough but he likes some basswood mixed with it. Fortunately every kind of honey has its champions. Mrs. Pellett likes the dark honey better than the light. She agrees with our friends from the South who want enough color and flavor to be really distinctive.

—ABJ—

We have had the pleasure of a visit from Mr. Gaston Lamarre, of the Department of Agriculture, of the Province of Quebec. Since the department has charge of bee inspection in the province it is quite natural that they should watch with interest any development which promises any help in disease control. Mr. Lamarre has investigated very carefully the results of the cooperative experiment and will return to Quebec fully informed as to results to date.

—ABJ—

Through the kindness of Leon Newton, Orchard, Nebraska, beekeeper who spends the winters in Florida, we have been enjoying some delicious mangoes. Some say that the mango is the finest of all fruits. There is no question of its high quality but it is a mess to eat for one who is not familiar with the right way to handle it. It has a thick leathery skin and a very large hard seed. The rich pulp surrounding the seed has a delightful flavor but how to get it—there is the problem.

Once when dining in Mexico our host demonstrated the proper manner to eat a mango at the table. It looked easy to see him do it but I have never been able to follow his example.

—ABJ—

There is much interest in the new red clover received from Dr. Zofka of Europe. As previously mentioned this clover is said to have short corolla tubes which enable the bees to get the honey. Others beside beekeepers are interested. Farmers in the Mid-west are concerned because there are no longer sufficient bumblebees to insure pollination of the ordinary red clover.

There is a very fine stand in the small field of this new red clover and it has made a very good growth. The County Agent recently brought a group of forty 4-H boys to see it.

FRANK C. PELLETT.